AMERICAN GAS ASSOCIATION MONTHLY

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GOOD service is worth all it costs and poor service is extravagant at any price, no matter how small.

C O N T E N T S

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Leading the Horse to Water

There is generally more than a grain of truth in those old sayings, and we, for one, agree absolutely with one of them.

You can lead a horse to water but you can't make him drink.

And that is exactly the position in which we find ourselves through no fault of our own. The horse may be ever so thirsty and the drink we offer may be ever so refreshing and beneficial but if the horse temporarily has assimilated the spirit of a mule, our hands are tied.

Just for example, let us take a concrete case to illustrate our point—The Monthly Sales Service. Do not misunderstand us. In taking this example we do not necessarily mean that what we are going to say applies literally to it. It is just an example of what may happen to any of the Associations' Committees' Services.

This service has been carefully worked up by men who know their business both in general sales stimulation and in the particular angle of such work in the gas industry. It is a good service. It is comprehensive. It is workable. It is inspirational, and yet intensely practicable.

It is a refreshing drink for the horse.

But, after it is offered to the horse; if he won't drink of it, what can be done?

This same thing applies to nearly all of the Association's work. No matter how excellent are the recommendations made, after exhaustive study and effort which has preceeded their offering, their full value is lost if they are not put into effect wherever possible and as fully as possible.

The Association, like the man holding the halter, is powerless to do anything further.

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Report of Committee on Rate Fundamentals

H. M. BRUNDAGE, Chairman

LAST YEAR YOUR COMMITTEE REPORT emphasized the necessity for effective judicial protection extended by the courts against confiscatory rates however imposed. This constitutional right to establish and collect adequate rates, though recognized as a legal rule for over a quarter of a century, depends upon judicial machinery adequate for the protection and enforcement of that right, a right which, in effect, is denied when either judicial protection is delayed or unconstitutional methods of determining rates are employed. In both these respects numerous court decisions within the last year, following precedents, have clearly established the principle that the constitutional protection extends not only to cases of positive action unreasonably lowering existing rates, but is equally effective against failure either to give the necessary increases or against unreasonable delay in granting reasonable relief. (Note 1.)

The fundamental principles which must control regulatory rate administration and service are gradually being placed outside the field of controversy by judicial decision. These decisions necessarily become the guide marks for administration, yet the equity jurisdiction of courts when once properly invoked is broad enough to cover all controversies involved, and though initially invoked upon constitutional grounds of confiscation, is not therefore confined to fixing limits of confiscation. In fact, the jurisdiction extends to determining broad limits of legality and reasonableness and of safe-guarding the right of utilities to collect rates for service within the limits of reasonableness.

The Statutory Court in its recent decision in the New York Telephone Company case, supra, rendered an opinion which well illustrates this principle. In holding that an eight per cent return be allowed utilities, the court said:

"The rate of return on property is a matter of custom and custom is fundamentally opinion. Admittedly it is and has been customary to allow as a reasonable rate of return for regulated businesses like this one eight per cent. The justification of the custom is the habit of business men, and a departure therefrom is not right because a court or commission affirm a lower rate. Reasons are

Note 1. New York Telephone Company v. Prendergast et al., Fed. Rep.; 25 R. R. 12, may be cited as the most recent case illustrating these principles. The decision is by the Statutory Court for the Southern District of New York consisting of Judges Hough, Knox and Winslow.

wanted and none are set forth in this record. Under such circumstances there is no presumption of correctness attaching to the seven per cent limit. The question always raised in rate cases is this: *What rate of return with due regard to certainty and security will attract the intelligent investor?* It remains to be seen whether a departure from the present customary rate is warranted by modern conditions."

Valuation

Recognition of the true present value of utility property as a basis of return is fundamental to service, rate making, or regulation. Your Committee's report of last year emphasized the far-reaching importance of all valuation questions. We reiterate what was there said:

"The constitutional assurance that private property may not be taken for or devoted to public uses without just compensation becomes illusory and ineffectual unless the constitutional guarantee carries assurance that the value of such property will be determined at an adequate sum and that the owners will be allowed to earn an adequate return upon such value."

Court decisions during the last year have been practically unanimous in recognizing and enforcing constitutional rights based on present value. While this important fundamental is settled beyond legal controversy, no exact mathematical formula has been enunciated by the highest court for the ascertainment of that value. It seems to be well settled that while the ascertainment of present value must within reasonable limits remain a matter of sound judgment based upon fair consideration of all pertinent elements, a finding of value failing to give substantial effect to reproduction cost reflecting present costs of labor and material will meet the condemnation of the Supreme Court and the various State and Federal Courts. (Note 2.)

In the New York Telephone Company case the court said:

"In our opinion plaintiff is justified in complaining of this procedure and result on several counts. By a long line of decisions, of which Monroe, etc. Co. v. Michigan (292 Fed. 139) is one of the latest; reproduction cost less depreciation is the dominant element in rate-base ascertainment. No one element is exclusive of all others, but the decision complained of deliberately lays aside as unimportant all serious consideration of reproduction cost.

"Book cost has plainly been most relied on and in the case of businesses organized under modern systems of record keeping it seems like backing experience against opinion to pursue this course. But just so far as cost is relied on, the question, Whose cost is under consideration? becomes the more important. Of course it is the cost to this plaintiff that must be considered, and it makes no difference whether that cost was high or low, in fact, evidence is demanded. Of course

Note 2. The following cases may be mentioned as among the more important decisions rendered during the last year:

Pacific G. & E. Co. v. City of San Francisco,—U. S.—Supreme Ct.
Monroe Gas Light & Fuel Co. v. Michigan Public Utilities, 292 Fed. 139.
Mobile Gas Co. v. Patterson, 293 Fed. 208.
Colorado Power Co. v. Halderman, 295 Fed. 178.
Joplin Gas Co. v. Public Service Commission of Missouri, 296 Fed. 271.
Streator Aqueduct Co. v. Smith, 295 Fed. 385.
In Re United States Commission to Appraise Washington Market Co., 295 Fed. 950.
New York & Queens Gas Co. v. Prendergast,—Fed.—, 25 R. R. 35.
Bronx Gas & Electric Co. v. Prendergast, —Fed.—.
Van Wert Gas Light Co. v. Ohio Public Utilities Commission, 25 R. R. 131.
Brooks-Scanlon Corporation v. United States, 25 R. R. 136.
New York Telephone Co. v. Prendergast, 25 R. R. No. 12.
Erie v. the Public Service Commission, 123 Atl. 471.
Columbus Gas Light Co. v. the Commission, 140 N. E. 538.
Oklahoma Natural Gas Co. v. Oklahoma Commission, 216 Pac. 917.
Natural Gas Co. of West Virginia v. The Public Service Commission, 121 S. E. 716, 717.
Report recently rendered by the Master in Atlanta Gas case.
Minnesota Light & Power Co. v. the Commission, 197 N. W. 359.
S. W. Bell Telephone Co. v. Ft. Smith, 294 Fed. 102.

also a thing may not be worth what it cost, but that only shows the infirmity of the evidence. To seek, as seems to have been attempted, to transform actual cost into a theoretical cost at 'normal prices' deprives the evidence of its attractiveness as being matter of fact and makes it only opinion evidence of rather a poor kind.

"The goal of investigation is present value, and since all value rests on the appreciation or estimate of users of the thing valued, all value is matter of opinion, and a good opinion is only ripened experience. Again, value for practically every legal purpose can be expressed only in terms of money, and present value can only be stated in terms of present money. It makes no difference that some regard prices as inflated and others think dollars deflated; we have no other way of expressing present prices or values except in present money.

"We do not attempt to make any finding as to the potency of persuasiveness of the opinion evidence adduced before the commission, but do hold it to be an erroneous method of procedure in the ascertainment of present value (Willcox v. Consolidated, 212, U. S. at p. 52; The Minnesota Rate Cases, 239, U. S. 352 at p. 454) to regard book costs, whether transmogrified to 'normalcy' or not, as proof of a better kind than opinion evidence."

The opinion follows the numerous precedents of the highest courts during the last few years. We are glad to bring this opinion to your special attention.

Going Value

The decision in Galveston Electric Company v. Galveston, 258 U. S. 388, was initially misunderstood by some or was subject to misinterpretation. The decision was in no way a denial of the right of a utility to have a substantial allowance for going value. In that case the only evidence offered or relied upon to support the finding of going value was a table showing the capitalization of the net balance of alleged past deficits in the early history of the company. This method of proof was held unsatisfactory by the Court.

The company's actual early deficits were little, if any, index of the present reproduction cost and present worth of the elements and advantages which comprise going value. The losses of early years were probably no guide or criterion as to even the *original* cost of the elements and advantages now possessed and which comprise going value. Such early losses were doubtless due to many factors, only a part of which could fairly be classified as constituting the original cost of acquiring the elements of going value. The decision casts no doubt upon the propriety of allowance for going value upon proper proofs.

Since that case was decided there have been very many decisions by the courts throughout the country and by commissions passing upon the question of the allowance of going value. The right to going value has been almost universally recognized by these courts and commissions, there being but very few commissions which have failed to give effect to it.

Going value exists in a going concern and is as real as any other element of value. Such criticisms as have been made are aimed rather at the failure to make proper proof of existing value rather than a denial of that value. Going value is as susceptible of proof as any other element of value. It is the obligation of the utilities and of the lawyers representing them to make adequate proof of that value.

This fact can not be too much emphasized by your committee, and in this connection we desire to call special attention to the paper presented by the Honorable William L. Ransom, of the New York Bar, before the Section on Public Utility

Law of the American Bar Association at the meeting in Philadelphia last July. This paper is able, exhaustive, and conclusive. It can be secured either from Judge Ransom or from the Secretary of this Association, and should be given careful study by all utility managers and lawyers who may be called upon to face the question of going value and the amount and the proper method of determination and proof thereof.

The recent decision of the Statutory Court in the New York Telephone Company case may be again referred to in this connection. The court said:

"The denial of any allowance for going value was also error of law. The quantum of that value we are not attempting to estimate or declare, but its existence is obvious from the decision itself.

"There has been and probably will continue to be much difference of opinion as to how to measure this kind of property, but in its nature it is a mere function or attribute of successful coordinated effort. A garment is made out of cloth and silk, buttons and thread and by labor but when completed and well made its value is more than the aggregate cost of the items. It is a going concern and as such has going value.

"It is found that this plaintiff was created and does function, and functions very well; therefore, it has going value because it goes well. The amount may be difficult of ascertainment, but that going value exists is self evident." (Note 3.)

The denial of any element of value or failure to recognize actual value is fundamentally against the public interest. The foundation for adequate service at reasonable rates, the object and purpose of utility service, rests upon the recognition of the rights of the utility to its constitutional protection and the legitimate encouragement of service in its broadest scope. Problems connected with service and rates disappear when the problems are solved in accordance with fundamental principles. The problems multiply, continue and exasperate when fundamental rights are denied.

Retirement Reserve and Expenses

Until recently perhaps one of the least generally understood problems in connection with utility practice or regulation was in connection with retirement losses and expenses. It is the firm belief of your committee that progress is being made along the lines of correct solution of this matter. The Uniform System of Accounts recommended by the National Association of Railway and Utilities Commissioners and adopted by this Association has met with a gratifying ac ceptance by a majority of the commissions of the United States having jurisdiction over gas and electric utilities.

Members of your committee have taken an active part in furthering the adoption of the Uniform System of Accounts, including the provisions for meeting retirement losses. Not only have members of your committee been heard by State Commissions on this matter but the Association, acting jointly with the National Electric Light Association, has taken an active part in connection with presenting sound views on this subject to the Interstate Commerce Commission in the matter of depreciation of steam railroads. Representatives of both associations appeared and testified, took part in the oral argument, and filed briefs. Decision in the matter has not yet been rendered. The opportunity is presented for constructive action.

The steam railroads of the United States have in substance requested the

Note 3. See also the case of Southwestern Bell Telephone Company vs. City of Fort Smith, 294 Federal 102. In that case there was proof of several of the items to be considered in arriving at going value and the Court held that where proof of this nature was made that was not subject to the criticism made by the Supreme Court in the Galveston case. See also Mobile Gas Company vs. Patterson, 293 Federal 298.

Interstate Commerce Commission to adopt the essential provisions relating to retirement losses as stated in the Uniform System of Accounts.

There can be no question as to the educative force and value of the work which has been carried on, and we feel justified in reporting that there is a growing understanding of the problem and a much more general appreciation of correct principles which must govern such matters than existed in the not far distant past. While it can not at all be said that correct principles have been universally adopted, there is good reason to believe that they are much more clearly and generally understood than heretofore, and there is reason to hope that the final solution of the question will be along the sound lines advocated by our association. The doctrine of theoretical depreciation strikes at the very foundation of investors' rights in property. Compulsory amortization of investment is but one phase of the government ownership propaganda. The actual value of the utility property devoted to a public use is denied its constitutional protection where the theoretical depreciation doctrine still exists or where attempts are made to compel amortization of investment. Not only do these concepts threaten the investment value of property devoted to the public use but they necessarily require higher rates to consumers and are of no possible public advantage.

The Function of the Utility in Rate Making

Often there is a failure to understand that the function of the utility in rate making has not been abolished by commission regulation but still leaves to the utilities the primary duty and power of rate making and authorizes the commission to establish rates only where they have found after hearing that the utilities in their rate making have failed to comply with the statutory rule that rates shall be just, reasonable, and nondiscriminatory. (Note 4.)

This right on the part of the utility is fundamental, and its recognition clearly defines the function both of the utility and the regulatory body. The common law right of utilities to make their own rates is subject only to the functions of the commission in seeing that the rates are fair, just and reasonable. Except where the Commission finds that this statutory rule has been violated the right of the utilities to make their own rates has not, as a rule, been interfered with by regulation. Regulation was not intended to be managerial in its nature, and this fundamental fact is coming to be more clearly recognized by both courts and commissions.

Working Capital

The report and opinion of Special Master James G. Graham in the New York and Queens Gas Company v. Prendergast case,—Fed.—, recently decided, contains a very valuable discussion of fundamentals referred to in this report. Passing on the allowance for working capital, he emphatically overruled the contention that current liabilities are to be deducted in arriving at the amount to be allowed. He said:

"There is, however, one feature asserted by the defendants with which I cannot agree. That is the claim that current liabilities should be deducted from the total of these other items. This claim was advanced in the previous rate litiga-

Note 4. In this connection see the address of Charles M. Bracelan of the New York Bar, delivered before the Section on Public Utility Law of the American Bar Association, July 7, at Philadelphia. Also the address of Nathaniel T. Guernsey, General Counsel of the American Telephone and Telegraph Company, delivered before the same section August 8, 1922, in San Francisco.

tions in this district and disallowed in every case, and this action approved by the courts. It seems to me this claim carries its own refutation. The various items entering into this account are in the service of the public and there is no reason why a consumer should not pay a return on them whether they are paid for or not. That is a matter with which he has no concern."

Uniform Public Utility Law

Although not directly related to the work of this Committee, but direct in its potential effect on rate fundamentals we may refer to the fact that in pursuance of a resolution passed at the annual meeting of the Section of Public Utility Law of the American Bar Association, held at Minneapolis in 1923, a special committee was appointed to make a study of the Public Utility Law of the United States and to make such report and recommendation as they thought proper in connection with the tentative formulation of a uniform Public Service Act. This special committee reported a tentative draft of such proposed law to the Section at its meeting in July this year in Philadelphia. In accordance with the Constitution and By-Laws of the American Bar Association, this tentative uniform public service act will be submitted to the National Conference of Commissioners on Uniform State Laws, which is composed of the commissioners appointed by the several states for the purpose of recommending uniform laws. This conference at its meeting in July voted to take up the question of a uniform public service act and appointed a special committee from among its members to make a study and recommendation in connection therewith. The labors of the Conference have been fruitful as to uniform laws in many other fields.

There are eleven states in the Union which are without public service commission jurisdiction over either gas or electric rates. It may be hoped that such action as may be taken by the American Bar Association may prove helpful to those engaged in formulating legislation for those states where commission jurisdiction does not now exist and that the advantages of uniformity in regard to public service acts may be secured in other states where the situation may be such as to make it advisable and practicable to adopt the uniform public service act.

The act reported by the special committee of the Section on Public Utility Law of the American Bar Association relates to electric, gas, artificial heat, water, telephone, telegraph, interurban street railway, pipe line and motor public utilities. The act is general in its nature and has not attempted to cover the steam railroad situation which is complicated and upon which there is considerable lack of uniformity throughout the country.

Cooperation

The spirit of cooperation between the various utility organizations and the utilities in matters relating to rate fundamentals during the last year has been very encouraging. It is realized that any unsound ruling or decision in any railroad or public utility case adversely affects all investors in public service enterprises. It is essential if we are to have sound decisions based on sound principles that all cases be adequately presented by those thoroughly familiar with public utility problems and public utility law. There is no excuse for an inadequately presented case as expert advice is available through the various utility associations.

Last year the Chairman of this committee was the late Robert A. Carter, vice-president of Consolidated Gas Company of New York. A large part of his

mature life was spent in advocating sound rate fundamentals and sound principles of regulation. He was among those who clearly understood that utility service in its broadest scope could be efficiently rendered only where the rights of investors in property devoted to a public use secured the full constitutional protection for that property. No specious system of logic threatening the elemental rights of investors in public utility property could pass his scrutiny, and he was as fearless in upholding the fundamental rights of utility investors as he was in exposing false or demogogic reasoning threatening the integrity of investments. His example was an inspiration which has left a lasting impress in the utility field. His death on February 4th last left a vacancy in the chairmanship of this committee which our president asked me to fill for the rest of the unexpired term. The report now read to you and made a part of the convention proceedings embodies the work and views of the committee carried on under his administration as well as mine.

Your committee, as at present constituted, feels that there are still sufficient mooted points on the horizon of rate fundamentals in respect of which a vast amount of work looking towards unanimity of views is desired, to make the continuance of such a committee, acting under the Association, advisable. Such recommendation is further emphasized by a consideration of the position in which the Association would be placed if they maintained no standing committee to which questions bearing on rate fundamentals could, if desired, be referred.

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The Window Display at the Convention

What Happened to the Saturday Night Bath When the Gas Service Failed in Tokio

Keystone View Co.

A Hot Bath "While You Wait."

THE JAPANESE are the most frequently bathed nation in the world, and when the great earthquake left nothing of the capitol's utilities except a tangle of mains and rails and wires, the failure of the gas service, which could have occurred only after such a monumental catastrophe, was not the least of the discomforts suffered by the unfortunate inhabitants.

Japan has a gas industry which will compare favorably with that of many European countries, as witness the progressive policy of the gas company of Kobe, which applied for and was received into membership at the recent convention of the American Gas Association.

The large urban population of Japan, which is one of the prime causes of its emigration crisis, is also at the same time one of the principal factors in the rapid growth of the Island Empire's manufactured gas industry. With a population considerably in excess of Great Britain, Japanese gas companies serve approximately sixty-six towns, varying in population from well over 2,000,000 in Tokio down to 32,000 in Otsu. In 1920 gas was used for heating in 965,213 buildings.

The Japanese gas industry more than doubled in the six years from 1914 to 1920, and in the decade from 1920 the number of companies increased by more than seven times, their capitalization increasing nearly five times, or from $13,377,173 to $65,039,179.

Tokio's water and gas pipes and street car tracks, although rendered useless for normal purposes by the earthquake, have aided materially in the city's reconstruction. It is on this old frame work of subsurface structures that the new city of Tokio is to rise.

A Community's Best Citizen

HILMAR PAPST, Vice-President and General Manager, Portland Gas & Coke Company, Portland, Oregon.

THIS IS A FORWARD-LOOKING AGE, and the public utility that is not attempting to do its full share in promoting the public good is an exception.

The "Public Be Damned" policy was abandoned years ago, and in its place we find the "Public Be Blessed" attitude to be the high road down which the modern and successful utility hopes to and does travel to industrial eminence and community esteem.

To speak of the success of one's own organization is permissible only as illustrative of the beneficial results that are the fruitage of a policy of constructive helpfulness.

It has been and is the aim and ambition of the Portland Gas & Coke Company to occupy the same place in the esteem of the community it serves as the community's best citizen occupies in his limited sphere of activity and among his more or less restricted circle of friends, acquaintances and associates.

We have felt, and still feel, that the measure of the community's respect and appreciation of our organization as an active factor in community life will likewise be the measure of our success as a business concern.

It would be futile to attempt to enumerate the things our organization, or any other public utility conducted along similar lines of public and private policy, does or refrains from doing to make and retain for itself an enviable place in the public esteem. It is sufficient to say that the act, actions and attitude of the "Best Citizen" must be the acts, actions and attitude of the public utility, multiplied as many times as the ability and opportunity of the utility exceeds that of the individual. It is a neat little problem in human mathematics that may well deserve the best thought and gravest consideration of those charged with executive authority.

Human nature is the same the world over. We as individuals persist with our grocer because he gives us honest measure and reasonable prices; is courteous and kindly; has a cheery greeting for the elders and an occasional sweetmeat for the youngsters; tides us over a temporary financial crisis; gives of his time and his effort and his goods to neighborhood activities and public and private charities, and is a good neighbor and a good friend, this year, next year and always.

Business? He need not worry. We are loyal and will continue to be.

As a result he becomes a neighborhood institution, happy, prosperous and at your service; and when in the fullness of his days, he goes to his reward, he passes to his successor a business institution that is at once a monument to his usefulness, and a matter of pride and worth to the community where he lived and served.

There are certain rules of conduct that we have laid down for our own guidance that may be stated here without impropriety, chiefly because our adherence to them has brought us into closer and more harmonious touch with those we seek to serve.

Perhaps the most important of these rules or observances has to do with our contact with the public through the medium of the rank and file of our personnel.

It is not wide of the truth to say that the average customer forms his opinion of the gas company, not from the obvious and outstanding executive, managerial and personal qualities of its officials, but rather from his personal contact with the office clerk, the service man, the meter reader or other employee by whom he is served, whom he sees, talks to and who is, in truth and in fact, so far as the customer's conception is permitted to go, the gas company itself. We have sought and are seeking to profit by our realization of this condition.

We and our employees have gone to school together to study the situation; to discuss it; to understand that it is a matter for our mutual concern; to devise ways and means and modes of conduct, and to carry the fruits of our study into the fields of our endeavor.

The result has been altogether gratifying. The meter reader or service man always has time to lift a tub for a tired housewife; to rescue a toddler from the perils of passing traffic and restore him to a grateful mother; to admire and inquire about the prize pullets or poodle dogs; to be always respectfully courteous, helpful, thoughtful and considerate. The office clerk makes the customer's complaints, troubles or perplexities his own; unwinds with skilled and nimble fingers the inevitable red tape that is always a matter of bewilderment and an incitement to anger in the uninitiated—all with the unvarying courtesy and good nature that inspires the impression that the transaction, whatever its nature, is on a basis of friendship and mutual interest and accommodation.

This "attitude of contact" must be and is backed up by the office and operating organizations charged with the duty of giving prompt effectiveness to the orders and arrangements made by customers through these regular channels.

Nor have we stopped here in this particular line of endeavor.

On the theory that a person must first be a good citizen before he can hope to be a model employee, our employees have become known as good neighbors; are active in promoting the common interest of their particular community, and so deport themselves generally as to win and keep the respect of their neighbors. They seek out the poor and needy; interest themselves in schools, churches and other community organizations according to their individual bent. Where help is needed that cannot be supplied through their own agencies, they bring their needs to the management and ways and means are devised to meet the various problems and situations presented.

The cumulative effect of this policy, consistently adhered to over a period of years, is all that could be desired. During the course of a year we receive many hundreds of letters in which the writers voluntarily advise us of the kindness, courtesy, care or consideration of some employee who had, for the moment, come in contact with them in the performance of an ordinary service and who, as a matter of habit and inclination, had performed that service in such a manner as to win the outspoken appreciation of the person served.

It is understood, of course, that no one act or activity can or should be sufficient

to establish the good repute of a utility or of an individual.

As indicative of the breadth of our attempt to keep our company in the forefront in all things that constitute good citizenship it may not be amiss to state these examples:

1. The most scrupulous care of the public convenience in our use of public streets, roads and highways.

2. Strict avoidance of damage to private property in the installation of services and appliances, and prompt and satisfactory repair of damage accidentally done.

3. Active participation in all organized efforts directed toward the betterment or upbuilding of the city and the territory we serve. This is accomplished largely through multiple memberships in organizations such as the Chamber of Commerce, and in liberal subscriptions to funds necessary to the carrying out of the aims and purposes of such organizations.

4. Financial and personal support of social, community and religious organizations.

5. Contributions to funds devoted to public charities and patriotic purposes.

6. Active and constructive interest in the public schools, such interest taking the form of placing at the disposal of the school board the technical knowledge we may be able to afford and which the school authorities may have opportunity to utilize for the common good; the free use of the modern equipment and instruction concerning its proper utilization; and the active support of all financing measures necessary to keep our schools in the front rank as efficient educational and character building units.

7. Erection, maintenance and beautification of our physical properties so as to make them conform to the standard of excellence and stability we have set for ourselves and which make them a civic asset to which any citizen may point with pride.

8. Active and intelligent cooperation in planning as well as in executing plans and purposes for civic and state benefit.

9. Independent help for the poor, needy and unfortunate who cannot be or are not assisted through channels of organized relief.

10. A "man to man" treatment of our employees that has served to weld our personnel into what we are pleased to call a "family" unit having a common purpose and a mutual respect, which, by reason of its very sincerity, extends beyond the individual to those with whom they come in contact, either in their personal relation or as representatives, for the time being, of their employer.

These are a few of the more outstanding things we are doing in a painstaking endeavor to make ourselves a useful and constructive force in our own community, and in an effort to demonstrate to the public by deeds the sincerity of our appreciation of the mutuality of interest that obtains between the public utility and those whom it seeks to serve.

We and others who are pursuing, each in their own way and to the best of their ability, this policy of mutual interest as between the server and the served, have been charged with selfishness—that is to say, we are accused of being good only because it pays to be good. Which is equivalent to saying that we would be bad but for the fact that it is more profitable to be good.

The answer to such an accusation can be given by any public utility executive who is a survival from the old and unhappy days when political conditions were such that most public utilities were forced, in order to survive, into practices that happily can have no place in the business morals of today.

There need be no selfishness in a policy of helpfulness. To perform a service that will profit your neighbor is a pleasant act; to do something that will profit both your neighbor and yourself is an employment than which there is none more pleasing in this world of work and worry.

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Buy Coal Now!

MR. FLOYD W. PARSONS, under the title "When Snow Flies and the Big Rush Is On," says: "While my opinion is only that of a single close observer I am not adverse to setting forth the guess right now that the present moment is a most opportune time to buy both oil and coal. The nation's commercial stocks of soft coal at present total about 48,000,000 tons. Instead of going up, our stocks of bituminous this year have shown a steady decline. If business improves this winter our present stocks assure us only about a 40 days' supply of coal.

"Viewing the present situation from the standpoint of the safety of the fuel consumer, I do not like the outlook. If we do not stock a large supply of coal during the good transportation weather that exists in the fall, there is not much chance to improve the situation in the winter. Most of us are of the opinion that business is entering a period of greater activity. We are also told that we may expect some weeks of very cold weather in coming months. While it is true that our mines have plenty of capacity to produce an almost unlimited supply of coal, we must not forget that the determining factor is distribution and not mine capacity.

"A year ago our industry had on hand at this season about 115 days' supply of coal. Now we have about 93 days' supply, according to latest estimates. Steel plants and electric utilities have more coal on hand at the present time than they had last year. It would appear to be very much the better part of wisdom for the gas industry to start in stocking coal at a lively rate before cold weather actually commences and before coal prices stiffen materially. The production of coal for the first 10 months of this year has amounted to only 382,000,000 tons, which total is 60,000,000 tons under last year's production for the same period. While the present rate of coal production is a litle better than that prevailing during years of depression, it is more than 90,000,000 tons behind the production of years of activity. * * *

"If you are at all short on stocks, get your coal instantly and have an easy mind when snow flies and the big rush is on."

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A Part of the Sixth Annual Exhibition

Preventing Accidents in Purifying Houses

Bulletin No. 3—Accident Prevention Committee

RECENT ACCIDENTS again point out the necessity of using continual vigilance to guard against the escape, accumulation and possible ignition of gas. By reason of the lightness of gas and because of the leaness of the air-gas mixture at which a serious explosion may occur, the desirability of taking the following special precautions in and around purifying apparatus is evident:

Preventing Explosions

1. The accumulation of back pressure on gas lines is progressive, but rarely builds up without giving some indication of its presence throughout the whole system of apparatus. All station gauges should be read and recorded by foremen and watchmen at regular stated intervals. Any unusual conditions, such as unduly high pressures on gauges or excess speeds on machines, which may be indications of trouble, must be reported immediately.

2. The adequate ventilation of purifying houses is of paramount importance. All buildings must be so designed as to render impossible the dangerous accumulation of gas pockets in or under any part of the structure.

3. All operations must be conducted so as to minimize the possibility of the ignition of any gas which has escaped and accumulated. Not only must the rules against smoking and against the use of open lights be rigorously enforced, but special efforts should be made to prevent men from carrying in their pockets matches or patent cigar-lighters while working in the purifying houses or around outdoor boxes. Special, or "vapor-proof" globes must be used.

4. Sparks will set off explosive mixtures of gas and air. For this reason it is desirable that all men should, while working on purifying apparatus, wear foot-gear free from iron nails and in which small stones will not lodge. Whenever possible iron-to-iron contacts between wrenches, valve-keys and other operating appliances should be eliminated by the interposition of brass or some non-metallic gasket or part.

5. The use of brass or bronze-tipped picks is suggested for the work of removing purifying material from the boxes.

6. Wherever it is necessary to employ machinery in or about purifying apparatus, power other than electricity should be used. If this is not practicable, then all electric motors, together with their controls, should be installed in buildings separate and distinct from those used for purification.

Emptying Boxes

7. Sulphur-impregnated oxide undergoes rapid chemical changes when first exposed to the air and evolves much heat. Men should be on guard, when opening purifying boxes, against the unexpected spontaneous ignition of the contents and a hose must be available to apply steam or water to any point where excessive heating becomes evident.

8. No man should work alone at any time in or around purifying equipment. When a box is first opened, and at all

times in hot weather, men should work in short relays, allowing the odd shift to be out in the open air for a few minutes at frequent intervals. Especial care must be taken when working under the "overhang," especially when the oxide steams.

9. Indoor purifying boxes which have been opened up for dumping or emptying should be emptied out that same day and not left overnight either partly empty or full with manholes in top or chutes in bottom open, as the contents will probably heat and fire.

Filling Boxes

10. Care should be taken that after boxes have been filled the cover is placed thereon and the box purged of air by backing gas through it. The gas may then be shut off and the box will remain safe for an indefinite period before being placed in service.

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Now a Service to Gas Companies

from the

Home Service Committee of the American Gas Association

An exhibit including charts, miniature set-up of a suggested Home Service Department and scrap books of data from Home Service Departments of Gas Companies, such as is illustrated in the accompanying photograph, is available to company members, to Affiliated Associations, etc.

The entire set-up will be shipped to any conference upon request, with shipping charges at their expense.

These charts and set-up give a concise idea of what a successfully operating Home Service Department will do for the Industry and the Gas Company.

Ada Bessie Swann's paper given before the Commercial Section at the recent convention, explaining these charts and also giving other data on Home Service work, is also available upon request.

The Home Service Committee will be glad to answer any questions and give any information on Home Service organization. Just write to this Committee.

SOME OF OUR AFFILIATED ASSOCIATIONS' OFFICERS.

1—G. W. Allen, Sec.-Tr., Canadian.
2—Chester Grey, Pres., Michigan.
3—A. G. Schroeder, Sec.-Tr., Michigan.
4—Clifford Johnstone, Ex.-Sec., Pacific Coast.
5—E. R. Hamilton, Pres., Canadian.
6—E. L. Hall, Pres., Pacific Coast.

ACCOUNTING SECTION

H. C. DAVIDSON, Chairman DEWITT CLINTON, Vice-Chairman
H. W. HARTMAN, Secretary

High Lights of the Accounting Sessions

SO MANY INTERESTING discussions were had of accounting papers and reports at the recent convention that we are quoting certain portions of the discussion which illustrate the viewpoints of those in attendance on certain of the subjects presented:

Analysis of Gas Company Statistics

ALEXANDER FORWARD *(Secretary-Manager):* "I want to take just a minute or two of your time on a matter that I think is of prime importance in connection with your discussion this afternoon and in connection with the Report of your Committee on Analysis of Gas Company Statistics.

"That Committee emphasizes the value, to the company and to the industry as a whole, of adequate statistics properly analyzed and that come to you from a Committee that speaks with the authority of a complete knowledge of the subject.

"You have heard from Mr. Floyd Parsons an extremely interesting and able address on a subject with which he is thoroughly familiar—the use of figures and facts. These two viewpoints concern you intimately, but what I want to talk to you about is the viewpoint of the American Gas Association Headquarters.

"The Association is the representative nationally of the gas industry. We are looked to for information—authoritative information about the industry. We are appealed to on all sides for figures and facts. We hear from investment bankers, brokers; from writers on financial subjects for the daily, weekly and monthly press. These inquiries come to us increasingly from people who have papers to write and from those who are engaged in combatting the insiduous propaganda of the day. And it is quite natural that they should look to us for this information and it is equally important that the American Gas Association should comply with these demands and do its full duty in this respect. But it can only collect, interpret and pass along information which is furnished by you. We have not the initiative information—we must get that from you.

"I don't need to tell you that in order to answer questions we have to ask them. We need your cooperation in this movement and I am glad to say that we are getting it in increased volume. During the year just ended we have secured information which we requested from one hundred more gas companies than we did in 1923. I think that is a most encouraging sign and we are very grateful for it, but like Oliver Twist, we must ask for more because the more direct figures and facts that we get the less we have to estimate. I don't need to tell you accountants how much more desirable figures are than estimates.

"I want to ask all of you to return to us the questionnaires that we send out and to answer all the questions thereon because those questions are carefully prepared by your Committee and there is a reason for asking them.

"I can well understand how the receipt of questionnaires which require a lot of work can soon come to be regarded as a

nuisance. I rather think it would be easy for me to get in that frame of mind if I had many coming before me, because I hate to see them come in. I know you rather dread the trouble of compiling information for them. I can understand how you feel about it, but we are coming in closer contact with you men who have these problems and we believe this contact will result in our receiving the information that we actually need with the least possible demand upon your time.

"The questionnaire is being changed and simplified by your Committee as a result of a study that is being made and that indicates to you that we are getting your viewpoint on the situation. We men who are in the Executive offices get our information, our ideas, our work and our incentive from you.

"If each company would follow the Committee's recommendations as made in this printed report, I know that the Association would be in a better position to respond with facts and figures and it ought to be and everybody has a right to expect it to be. Questions have come before us at Headquarters that are difficult to answer. More particularly what I had in mind at this time is what I referred to in my annual report this morning—the amount of gas sold for each of its major uses. We have great difficulty in securing this segregation from the reports received and it is a very important figure so far as the future of the industry is concerned.

"I want to say in closing that at Headquarters we are reorganizing our Statistical Department in order to give the industry a more complete and prompt statistical service, and this work will be in the immediate charge of the Secretary of your Section and will be continued in close contact with your Committee on Analysis of Gas Company Statistics throughout the year.

"When you understand our problem at Headquarters as I have tried to present it to you, I think we can depend upon you for the cooperation that we need and we can rely upon you to take the questionnaire and fill it out and send it in promptly. You know, even better than I do, the importance of making figures and statistics available as quickly as possible. Have this work done promptly so that we can get out information to the world before it gets old or out of date, because it is not pleasant to reply to an inquiry for information and then have the answer come back that the information is a little bit out of date—a little bit too old. I believe that you appreciate that a very large part of the value of statistics lies in their promptness and the availability to the people who require the information they represent. To that end we hope to get to the point where we will be able to tell the story of a year's development in the gas industry as soon after the first of the year as it is humanly possible to collect and analyze the statistics sent in."

B. J. MULLANEY *(Chicago, Ill.)*: "I might say that from my point of view, having been concerned mostly with the activities of the Publicity and Advertising Section of the American Gas Association, that this is about the most gratifying moment that our Section has experienced in its history and connection with the American Gas Association.

"The Accounting Section is apparently starting something with the ability to put it through. It is starting something that we have been trying to get for four or five years without success. The work of the Publicity and Advertising Section of the Association, with its related activities through state committees on public utility information and similar enterprises,

is to give expression to the work of the Association.

* * *

"The Publicity and Advertising Section is concerned primarily with promoting the idea of better public relations for the industry. Now the basis of that Section's work, the foundation of it, is information—information about the industry which can be used effectively for the benefit of the industry. But such information is only half completed without dependable, reasonable and comprehensive statistics about the industry.

"Up to this time we have had to depend mostly for statistics about the gas industry from figures that were two or three years old. When we put out a piece of educational copy that we expect the newspapers to use, or other publications to use, and the figures in it are two or three years old, the only attention we get is a laugh. It is simply impossible to do anything with that kind of statistics.

* * *

"The work that the Accounting Section has started directly concerns a half dozen other points of view that I dare not take up your time in explaining. It directly concerns the work of the Section in which I am most interested. We have tried and tried and tried again through Headquarters to get some sort of statistical gathering system started that would to some degree, at least, serve the needs that we encounter every day. We have always been met with the excuse that it could not be done; that the companies would not respond and that the companies would not be bothered working up statistics for that purpose. It is encouraging to the highest degree to find you gentlemen in the industry who are responsible for the accounting, and who will be responsible for whatever statistics are forthcoming, taking an interest in this work. Don't feel that there is anything impossible to the job."

GEO. A. NEAL *(Philadelphia, Pa.):* There is one thought that the heavy artillery has missed that I would like to direct the attention of this Section to. I refer to accounting practice whereby it will be possible to detail cost to each function of doing our business. That is not just exactly the way it is expressed in the report, but it is certainly true that if we are going to expand along the lines that some of the promoters of this industry dream about, we must know the cost of our service."

Relations with Customers

MR. ALEXANDER *(Haverhill, Mass.):* "The trouble in sending employees to the customers is that they go to the front door and knock and when the customer opens the door they stand there trying to explain what they have come for. The customer, on the other hand, is afraid the man is trying to sell her something and get his foot in the door, with the result that the man who goes out to explain that he is the good-will dispenser sometimes meets with a whole lot of resistance.

"Our idea is to get a man to that house who has to go there for a perfectly good reason. Who is the fellow that goes there most during the year? There is only one and he is called the meter reader in most companies but we don't call him that any more. He is called the 'company representative.' That fellow incidentally reads meters but that gives him access to the premises. He goes there twelve times a year and the customer knows him. He not only goes in and reads that meter but as he goes through the kitchen and happens to notice a pot with black streaks along the side, he asks the lady if she is having trouble with her stove. She probably says, 'It never did work well but

I supposed that was the way it should go.'

"All that man has to do is take his screw driver and adjust the air. That is part of the service. What I am trying to bring out to you people is that meter reading is the incidental part of it but it is through the meter reading that this man is able to adjust the stove. He doesn't want to forget that because when he goes back next month he wants to get a chance to talk to her. You don't want to hurry this process; it is an evolution scheme. He puts down on the back of the card that he adjusted the stove the last time, so the next month he says, 'I adjusted the stove last month; I hope it is working well.'

"All of you gentlemen know very well that Mrs. Jones, or whoever she is, is going to feel very kindly towards that man. He gets into conversation with her and probably finds that little Willie has the mumps. He puts that down on the card because when he goes there next month he wants to be sure about Willie's mumps. In other words, if he gives that woman one chance to talk you can't stop her. That is the way you have got to sell your stuff and sell your company.

"Now this is not an idle dream. This is in actual operation in one company in the middle west and has been for two years. One of the meter readers was so good he came to me one day and said he would have to put an addition on his cellar because he was bringing home so many preserves and pickles that the customers had given him. When you get the women giving away preserves and cakes and pies, you certainly have customers' relations.

"In Haverhill, Massachusetts, we have sixteen thousand meters and we have divided the territory into eleven districts. We formerly used between five and seven meter readers, depending whether they were worth much, but now, instead of having seven meter readers or five meter readers, we have eleven. Why? Because we want those men to have time enough to not only read meters but adjust little complaints. We want those men to have a chance to talk to our customers.

"You can't improve company relations with customers by using the ordinary meter reader. You know how he sails through into the cellar, perhaps shouting 'gas man,' and, before the customer sees him, he is out another door and gone like a blue streak. Eventually the meter reader is not only going to handle that work, but adjust complaints and talk to customers and be a salesman. You ask, 'Can you get him?' Yes, you can get him but you have got to pay more for him. Why isn't it a great deal better to take one man—a good man—and train him for that district and let him be your company representative and do all your work in that district? Think of the foot hours and man hours that you would save by that proposition! You send a meter reader around and he walks to the district and back to the office; you send a collector around and he does the same thing and when you send a solicitor around he kills about four-fifths of his time. Then you send around a third or fourth man who knocks at the door with a crazy-fool smile and says, 'I've come to see if you like us.' Gentlemen, it can't be done that way."

Employee Pension Systems

F. M. Dee *(Bureau of Commercial Economics, Chicago, Ill.)*: "The section of the Sub-Committee's report on the subject of pensions deals lightly with the most vital factor, that of financial structure, although the ultimate success or failure of any pension plan is almost wholly dependent on the way it is financed.

"Many pension systems in operation at present will be unable to endure the strain in future years because of inadequate provision for meeting annuity payments when they approach the maximum. Employers have adopted pension plans without fully realizing the extent of the financial burden assumed, and the refinancing or modifying of a pension plan after it has been placed in operation is likely to cause dissatisfaction on the part of the employees and to shake their confidence in the financial judgment of their employer.

"The employer who is considering the adoption of some form of pension system should abandon the idea unless he is satisfied beyond reasonable doubt that the proposed plan will stand the test of time.

"The following are methods by which voluntary pension plans may be financed:

"(1.) Setting aside a fund at the outset large enough to provide an income sufficient to meet all demands. This method is impractical because of the large amount of capital required which is beyond the reach of the average employer.

"(2.) Setting aside a smaller sum, supplementing it with annual appropriations. This method is uncertain as there is no assurance that the appropriations will not have to be greatly increased each successive year.

"(3.) Annual appropriations, without a fund, to meet each year's expenditures as they arise. This method is objectionable as it is practically certain to land the pension scheme on the rocks of a business depression or an unforeseen expenditure.

"(4.) The building up of a fund on an actuarial basis by setting aside such percentage of every worker's pay as actuarial estimates indicate will be necessary to provide the pension. This scheme may be supplemented by a lump sum at the start. This method is one usually recommended by pension authorities. It involves extensive estimates and an administrative burden, with periodical revisions of original estimates. It is the safest way however, or providing for the future of a voluntary plan.

"In following the latter plan, estimates of the cost of a voluntary plan must be based on a careful study of such factors as age, expectancy of life, sex distribution, rates of labor turnover, occupations, and other matters. And even with the data available there is no actuarial formula capable of general application.

"The recommendations in the report apply to the plan which bases payments on the earnings of the employees during the last five years of service. Under such a plan provision is not made for conditions which cannot be foreseen. Witness the rapid increase of wages in the past few years and the attending burden on pension funds which use the basis as recommended. Basing of payments on average annual earning for entire period of service is a much safer way of setting up annuities.

"An idea of the costs of voluntary systems and of the increasing demands on the funds as the years go by may be gained by consideration of the following figures of the Baltimore and Ohio pension plan:

Year	Payments to Pensioners
1885	$ 7,354
1890	25,000
1895	34,800
1900	49,026
1905	73,322
1910	157,273
1915	266,538

"This company pays small pensions; a trainman of 48 years of service would receive about $45.00 a month. The experience bears out the actuarial principle that under formal pension systems disbursements continue to increase over long periods of years.

"The pension plan recently adopted by the Middle West Utilities Company is an example of what may be done in providing for financial security of pensions. A careful survey was made which brought together all the pertinent facts about each employee which would have a bearing on the necessary calculations. Actuarial computations were made as previously described and a pension record was set up for each individual employee which shows the accrued liabilities as yearly employee earnings are determined.

"Through this means the company will be able to tell at any given year just how much its pension liability amounts to and of the relation of appropriations to disbursements. It is estimated that the cost of the plan over a period of 40 years will average 3½ per cent of the annual payroll."

Fire Prevention Before U. S. Chamber of Commerce at Washington Meeting

The work of trade associations in fire prevention was discussed in a splendid address by J. G. Reese, Chairman of the Insurance Committee of the American Gas Association and National Electric Light Association. Mr. Reese pointed out that through national trade associations the message of fire prevention can be presented in an effective manner to business leaders. He stressed the part trade papers can play in calling the fire prevention problems of their industries to all members' attention. His address concluded with a pledge of full cooperation on the part of the associations he represents.

PUBLICITY AND ADVERTISING SECTION
F. L. BLANCHARD, Chairman A. W. HAWKS, Jr., Vice-Chairman
CHARLES W. PERSON, Secretary

Words that Hurt the Gas Industry

HENRY OBERMEYER

Said Don to Hugo: "Alack and alas,
We both sell a substance that people call gas,
And though our products don't smell very nice
Most everyone buys them and pays us our price."
Said Hugo to Don: "I know you're a gent
But nevertheless your remarks I resent,
Because the name gas is only a screen
Behind which you're hiding your bum gasoline."
—Rotary Club, Redlands, Cal.

WE ARE REPEATING an old story with the hope that the tolerant reader will bear with us for the sake of the moral. It originated in Topeka, Kansas.

It seems that a party of Pennsylvania tourists, flivvering America first, were halted just outside the town limits with the discovery that the fuel tank had suddenly gone dry. They proceeded to get out and push.

They were making haste slowly across the intersection of Sixth and Jackson Streets, faced by the building of the Capital Gas and Electric Company. Straining every muscle, the gaze of the erstwhile pilot of the skiff fell on a glittering sign. The comforting message read:

"You Can Do It Better With Gas."

The gas industry has converted millions of people to the acceptance of that slogan, and among them are the editors of our daily newspapers. Their interpretation of it, however, is not always what it was meant to be. Almost it would seem as if every paper had pasted up its own version over the copy desk: "If it's done in haste, you can do it better with gas—it has only three letters."

That is only human nature. Talk to any copy reader and he will tell you what is wrong with this country is the lack of three-letter words. If he can write a headline with three-letter words he can tell at least two or three times more of his story than if he had to use words of eight or ten letters. But he is open to conviction. Prove to him that he is doing lots of harm and very little good, and, unless he is very rushed or limited as to space, he will begin to discover gasoline and other polysyllabic words.

As it is, he prefers to write them as follows:

"Standard Boosts Gas" reads a headline in the St. Paul Dispatch. We don't know whether the Standard Gas and Electric Company have protested this or not. Standard Oil of Indiana is the company mentioned in the text—if you should happen to read that far.

"Federal Board Should Hear Row on Rates on Gas" headlines the Atlanta Constitution, and we learn that freight rates on gasoline between New Orleans and Atlanta are matters for the Interstate Commerce Commission to handle.

"Forty Days' Supply of Gas" reads a New York Evening Journal caption, adding that stocks of gasoline are dropping rapidly to the 1,000,000,000-gallon level.

The New York Sun tells us that "Gas Tank Explosion Burns Two Enforcement Agents." There is no record of a true explosion of any gas holder in the history of the gas industry. Gas men know that—but other persons read The Sun. A headline almost identical with this appeared in the Boston Herald.

"Three Children Killed by Gas" is the rather far-fetched manner in which the New York Evening Telegram tells us that the kiddies were run down by a speeding automobile.

"Short Measure Gas Sellers Trapped" said the Boston American a few years ago; whereupon the Boston Herald illustrated one way in which the curse could be taken off: "Accuses 'Gas' Men of Short Measure." Taking all things into consideration, the use of quotation marks when gasoline is intended is probably the best and fairest way yet devised to solve the difficulty. The problem then is to keep the word in the slang category—an extremely difficult procedure as any dictionary will bear witness.

However, the confusion of gas and gasoline is not the worst crime in a good gas man's vocabulary. The public has never before demanded so much information concerning its public services as

A "Guilty" Cartoon.

it does today, and there have never been so many public service men trying to interpret them both by word of mouth and through the printed page.

Words are powerful and sometimes treacherous things. "Liberty, Equality and Fraternity" precipitated the French Revolution. "Rum, Romanism and Rebellion" defeated J. G. Blaine for the presidency of the United States. "In Hoc Signo Vinces" has been the war cry of the Christian religion. One never knows what a word is going to accomplish. "Scofflaw" was offered by the prohibitionists as a dry enforcement aid. Within a week it became a badge of defiance. You never can tell.

But those who have had most experience with the tides and winds of public relations have learned to steer clear of certain definite obstructions, blind alleys and counter currents of popular thought. The profusion of educational publicity about the public services during the last few years has resulted in some as yet very faintly defined standards of practice concerning the choice of words. The committee of the American Gas Association on Improving Public Relations Through Employees Calling at Customers' Premises, which is a sub-committee of the committee on Relations with Customers, reported to the 1924 convention at Atlantic City that:

"It is very difficult to obtain standardization on the nomenclature peculiar to our own industry, since certain locations have their own colloquialisms and phrases. However, terms which are meaningless to customers should be discontinued and those words which are common to practically all companies should be improved upon, such as:

B.t.u.'s to Units of Heat
Meter Deposit to Security Deposit
Clock or Complaint Meter to Gas Consumption Recording Meter
Delinquent Bill to Past Due Bill
Complaint Man to Service Man
Index or Statement to Meter Reading.

It will be noticed in every case where improvement has been effected it has been through the clearing up of obscure or technical terms, or—and this is the thing we are most concerned with—the elimination of words having an unfortunate reference or implication. An enterprising person might easily find hundreds of words in constant use among public service men which come under this head and which do actual harm to the cause of public relations. Familiarity with these accustomed phrases has rendered many of us insensible to their true effect on public sympathies.

Thus we can suggest as additions to the above expurgatorial list such words as the following:

CORPORATION—A word which has left an acrid taste with the public as the result of attacks on the corporate interests. Where the word is already part of the corporate name, it may even be worth the effort to make a change. In one or two cases, I believe, this has actually been done, the word "company" being substituted. Speak of your local services as public service *companies*.

ILLUMINATING GAS—Leaves the impression that the gas company still depends primarily on its lighting business and therefore represents a declining industry. "Manufactured" serves to distinguish it from the natural product, and is, of course, preferable to the adjective "artificial," which has long been outlawed. But ethyl and chlorine gases are also "manufactured" and are frequently confused with "town" gas by the careless reader. "Fuel gas" or "heating gas" are excellent substitutes where it is not absolutely necessary to distinguish from the natural variety; where this *is* necessary, the complete phrase "manufactured fuel gas," could be used to advantage. It is

an easy phrase, and has the added virtue of advertising the universal usefulness of gas whenever it is employed.

CONSUMPTION—Not as bad as some of the others; but, so long as there is a better word, why not prefer it? Here the accent is on the depletion of the product instead of on its usefulness. "Utilization" offers a fairer picture; or, more simply, "use." He who uses gas is a gas "user." For the same reason, it is best not to say—

CONSUMER—Mr. B. J. Mullaney, vice-president of The Peoples Gas Light and Coke Company, has written suggesting that "we ask all trade publications and all writers on gas subjects and all gas advertisers, and everybody else who may have occasion to write about the industry to use the word 'customer' instead of 'consumer' in mentioning users of gas service." There is the added objection that editorial writers frequently draw a distinction between the "consumer" and "producer" elements of society as having opposing interests.

PUBLIC UTILITY—This term is strictly technical and, to the average gas user, explains nothing of the company's purpose. Picture words are absolutely necessary in order to carry our message to the people; and this is anything but a picture word. "Public service company" tells the entire story in a phrase.

The word service can be used to advantage in innumerable connections. Gas service, not gas alone, is the commodity which we sell and which our customers pay for. Why not say so?

If all these examples could be boiled down to a general conclusion, it would be this: Tell your story from the reader's point of view. The public may be amazingly slow-witted in some things, but they are uncannily clever in accepting or rejecting any claim to sincerity. No man can learn the principles of public relations by memorizing a few rules o' thumb. He is most valuable as the people's advocate and the interpreter of the company for which he works.

Going back to the editors, it is a grave mistake, and one which many companies are prone to, that they ignore the influence of the newspapers in little things, even to the extent of failing to set them right in the most obvious instances. Perhaps they have grown discouraged because of repeated and apparently wilful misrepresentation. Few newspapers, however, will refuse to acknowledge and print corrections when the reason for them is clearly indicated.

The code of ethics of the newly organized American Society of Newspaper Editors, comprising the editors of most of the large daily newspapers of the nation, contains the following article:

"It is the privilege, as it is the duty, of a newspaper to make prompt and complete correction of its own serious mistakes of fact or opinion, whatever their origin."

Sooner or later it will make a real effort to get its stories right in the first place.

An instance of harmful publicity which was successfully attacked by a publicity director occurred recently in New York City. The daily newspapers carried detailed accounts of the deaths, in an uptown apartment house, of several persons who had succumbed to the insidious effects of carbon monoxide gas emanating from a water heater in the basement. It was a coke-fired water heater, but very few of the papers mentioned the fact. Most of them described the fumes as "coal gas"; but, since this is a term used by the gas industry to distinguish the refined product of coal carbonization from oil, water or natural gases, the majority jumped to the conclusion that asphyxiation was due to a

gas-burning appliance. Even the chief of the Health Department ordered an immediate investigation into the subject of gas-fired heaters.

"The solution of the problem of preventing poisoning by illuminating gas and similar causes is one that has been and is now being particularly studied by the Health Department," he said. "It is an extremely difficult subject when one considers the various mentalities of the 6,000,000 people in the city, all of whom use gas and gas appliances every day in the week. It is impossible to make a foolproof device, and also out of the question to expect all of the inhabitants to always bear in mind the potential danger of the apparatus."

The New York Times, writing editorially of the tragedy, reported that "its origin has been traced to a water heater in the basement in which illuminating gas was burned."

This would have remained the extent of public information on the subject had it not been for the quick action of the director of public relations of the Consolidated Gas Company. His letter pointing out that "there was not a gas-fired water-heater in the entire building," and that "there is no record in the company of an accident caused by gas-fired water heaters" was not only printed on the editorial page, but correction was also made in the news columns.

That other companies have had similar experiences is evident from the following letter written by Mr. H. S. Whipple, manager of the Rockford Gas Light and Coke Company, Rockford, Ill., to the editor of the local newspaper:

"I appeal to you—a man with a tender heart and human sympathy—to have your able reporters use the word 'gasoline' instead of 'gas' when telling about a gasoline explosion or a gasoline fire and to say 'overcome by furnace gas' instead of saying 'overcome by gas,' for every time I see such a heading in your valued paper I have heart failure and, of course, you want to save me from that. I appreciate the fact that you can write gas quicker than you can write gasoline or furnace gas and the shorter word saves much space but after all consider my feelings.

"The explosion at the municipal sanitarium must have been a gasoline gas explosion as our gas main is not within a half mile of the sanitarium. I am sure after reading this humble appeal to your sympathy that you will gently tell your reporters to use the longer word."

The editor replied in the same vein:

"Once before have we seen the imperturbable Yankee face of Mr. Whipple seamed and flushed with anguish. That was when after forty years of service unbroken by any trouble the gas plant failed to function for a few hours and housewives had to take to the kerosene stove for a meal or two. When we saw his grief then we made vow that if ever any hurt could be removed from him this paper would break its collective neck to do so.

"When this letter was read to Republic reporters, the moments were as silent and solemn as a prayer meeting. Tears splashed to the floor and were furtively wiped from the cheeks of hard-boiled journalists. Men who have never been known to display emotion sobbed as they vowed never again to bring Mr. Whipple to the edge of heart failure.

"And for fear that the word 'gas' may inadvertently slip into a news story, notice is hereby given that readers are always to assume that it is not the gas manufactured by Mr. Whipple."

The neighborhood children used to say "Sticks and stones may break my bones; words can never hurt me." But they have grown up since then. So has the gas company.

Affiliated Association Notes

Pennsylvania Gas Association

At a meeting of the Council of this Association held in Philadelphia on November 7, 1924, Secretary G. L. Cullen announces the following appointments were made: H. H. Ganser of Norristown as Chairman of Public Relations Committee, L. S. Williams of Harrisburg as Chairman of the Gas Standards and Service Committee, and A. C. Taylor of Reading as Chairman of the Mid-Year Meeting Committee—all succeeding John H. Keppelman, deceased. H. N. Squier of Scranton was named as the representative of the Pennsylvania Gas Association on the Managing Committee of the A. G. A. Technical Section to succeed R. C. Cornish who was elected Chairman of that Section at the recent Convention of the American Gas Association. Grier Hersh of York was appointed as an additional member of the Public Relations Committee.

Southwestern Public Service Association

We remarked in the October Monthly that Secretary E. N. Willis, of the Southwestern Public Service Association, had some proposition in trying to meet utility managers and inspect utility properties in Texas and Louisiana, but that was only a small part of the story. On two later trips, both made by automobile, Secretary Willis travelled in the territory from Dallas, south to Brownsville, a total of 2500 miles, visiting 123 towns having utility service; and again from Dallas through west Texas and Texas Panhandle, 2000 miles, visiting 101 towns. In these sections visits were made to all public utilities—gas, electric light and power and electric railway—whether members of the Association or not. In both of these sections the number of cities having gas service is comparatively small but Secretary Willis reports increasing activity and a reasonable growth in the use of gas. Among the results of these trips are increased interest in the annual conventions of the Southwestern Association and a record attendance is expected at the 1925 meeting.

Withal, Secretary Willis found time to make the trip to Atlantic City and attend the conventions of the American Electric Railway Association and the American Gas Association. He says that this arrangement is a very great boon to secretaries who, like himself, are located at considerable distance from conventions and who are interested in more than one utility industry. He was especially outspoken in his praise of the exhibits and the program at the American Gas Association convention.

Secretary Willis has announced that the 1925 Convention of the Southwestern Public Service Association will be held in Houston, Texas, May 19 to 22.

Affiliated Association Notes

Illinois Gas Association

Secretary R. V. Prather announces that the annual joint convention of the Illinois Gas Association, Illinois State Electric Association and the Illinois Electric Railways Association will be held in Chicago, March 18 and 19, 1925. There will be a joint session in the forenoon of each day with a separate meeting of each association in the afternoon. The annual banquet, an institution of the convention of these three associations and one which enjoys a remarkable reputation, will be held on the night of March 18. There will also be a get-together luncheon at noon of the 18th, which will be divided into the various branches of the several industries, such as commercial, technical, engineering, executives, etc.

Wisconsin Utilities Association

The Accounting Section of the Wisconsin Utilities Association held a meeting in Madison on November 6 which was the most generally attended of any similar meeting up to date. Approximately 60 people were present during the sessions.

The meeting was characterized by unusual interest in the topics under discussion. This was partly due to the fact that there were no set speeches on the program, each topic being treated by several representatives of the companies.

One of the most interesting features of the program was the discussion led by Charles B. Scott on "Development in Insurance Matters." Mr. Scott mentioned several recent decisions in insurance matters that will affect Wisconsin utilities.

The other subjects discussed at the meeting were: "Methods and Classification of Merchandise Accounting," "Methods and Costs of Billing, Meter Reading and Bill Delivery for Urban and Rural Customers," "Classification of Accounts," "Construction Work Orders," "Statement of New Practice by Tax Commission on Valuations of Public Utility Properties," "Fixed Capital Records," "Storeroom Accounting Costs and Methods," "Methods, Forms and Routine for Handling Security Issues and Security Holders Records" and "Importance of Compiling and Using Statistics."

Morning and afternoon sessions were held, followed by a most successful dinner dance in the evening. An inspection of the bookkeeping machine installation at the office of the Wisconsin Power & Light Company was made on the following morning.

The Commercial Section of the Wisconsin Utilities Association held a one day meeting, on November 7, in Madison. In a discussion on "The Place of a Commercial Department in a Public Utility" John St. John pointed out the necessity of every utility having a well organized commercial department with a carefully thought out merchandising policy in order to increase the gas and electric sales of the utility and also emphasized the necessity of this work being in charge of men who have the qualifications and experience of good merchants. Considerable discussion took place on different plans for operating commercial departments and compensation of commercial department employees.

In the afternoon a discussion on "Merchandising Gas and Electric Appliances" was led by an excellent paper by J. H. Fagan who was in favor of the campaign idea and pointed out that the success of campaigns depends upon the fullest cooperation between the manufacturer and the utility in preparing and carrying out a detailed plan of action. Mr. Fagan presented records showing that, where campaigns were carefully planned and executed, gas and electric sales had been increased in proportions previously thought impossible. This paper led to a thorough discussion of methods of merchandising.

A banquet was held in the evening at which entertainment was provided, also an address was given by Dr. Paul W. Ivey on "Retail Salesmanship."

The meeting was acclaimed by those present as the best and most helpful commercial meeting ever held by the Wisconsin Utilities Association. The attendance of 90 was made up of managers of properties, their commercial managers, some utility company salesmen and a number of manufacturers' representatives.

An Effective Window Display by the Northern Indiana Gas & Electric Co.

Report of Chairman—Gas Range Division*

CHAS. T. AARON, Chairman.

I AM PLEASED to submit herewith a report of the activities engaged in by the Gas Range Division, also calling attention to certain phases of activities which should be taken into consideration during the coming year.

Gas Range Manufacturers' Association

It was felt that the greatest amount of good could be accomplished for both the stove and gas industries if this association and the Gas Range Division would work in the utmost harmony, and at a meeting of the Range Association, held in Chicago in March, the resolution was adopted by them to cooperate in every way possible, so there would be no duplication of effort.

Gas Range Specifications

It was hoped that we could this year make these specifications more than merely a printed pamphlet. It is a known fact that we do not get these specifications into the hands of the manufacturer contemplating entering the gas range field until after he has completed some of his pattern work and it then becomes expensive and embarrassing to make the necessary changes. With this idea in mind, information in the form of an open letter, addressed to the stove industry, was prepared and mailed, together with a copy of the gas specifications, to every stove plant in the country not listed as members of this Association. This was, in general, received with favor by the stove industry, and was productive of many inquiries for further information, and resulted in obtaining several new memberships.

The Attitude of the Gas Company Towards These Specifications

It is hoped that this Section will once again call to the attention of the General Section, and more particularly to the Commercial Section, the need of their support of the manufacturers adhering to these specifications. Many instances have come to light during the year where the gas companies have made purchases of ranges not conforming to the specifications, merely from a price standpoint. If we are to have these specifications followed, we should have the support of the industry as a whole.

Cooperation with the Dealer by the Gas Company

In an endeavor to get over these ideas of cooperation with the dealer who is merchandising a good grade of appliances, a paper was prepared and published in several magazines, outlining the advantages to be gained by taking this step. The ultimate aim of the industry should be the output of the greatest possible number of satisfactory working gas appliances, whether they be sold by the Commercial Department of the company or by some local dealer, and this can only be accomplished by the utmost harmony between the manufacturers, dealer and the gas company. Further activities

*Presented at Manufacturers' Meeting in Atlantic City, N. J.

should be carried on during the coming year along these lines.

Committee on Simplified Practice

The National Association of Stove Manufacturers is working along these lines at the request of Secretary Hoover, whose desire is that the process of manufacture be simplified as much as possible.

At the request of the National Association of Stove Manufacturers, a committee was appointed to act in conjunction with their committee. The aim of this committee is to reduce the number of types of ranges manufactured by the various manufacturers. The subject is one of importance and in the opinion of the Joint Committee was so extensive as to require a great deal of thought on the part of each manufacturer. A new committee has been appointed by the National Association of Stove Manufacturers and they have not as yet held a meeting, but will, no doubt, do so this fall. I believe that a committee of this sort should continue to work along these lines.

The two following subjects should receive very serious consideration during the coming year, as they are of the utmost importance to both the gas and stove industries. There has not been sufficient time this year to do more than give them a passing thought, but the Range Division should analyze them very carefully during the coming year.

Nomenclature of Parts

There is at present incorporated in the gas range specifications a list of standard names of parts for gas ranges. This list is not complete, in that it covers only the main parts of a gas range, but an effort should be made to standardize the name for every part, and to get this information over to the gas companies and the dealers. There is no phase of the stove business so troublesome to everyone as the repair part business and a standard name for all parts and possibly a standard repair parts list would be a step forward and would do a great deal towards enabling the ultimate consumer to get the proper repair part with the least amount of delay.

The Numbering of Ranges

From the gas man's standpoint, there is evidently a need for the manufacturers to give some thought to the numbering of the various appliances, the attention of the chairman being called to this point on several occasions by the larger gas companies. It is a point worthy of consideration. The number scheme does not seem to embarrass the customer who has handled any certain lines for a considerable period of time, because he has become familiar with that manufacturer's particular scheme. The trouble comes in when he is called on to furnish a range of some other manufacturer. It is rather late to change any numbering system on existing models, but it might be to the advantage of all if the manufacturer would give due thought to his numbering scheme code system. A request has been made that some figure in the number system be made to designate the size of the oven, whether 18″, 16″ or 14″ oven.

In consideration of the numbering scheme, as well as the repair part nomenclature, assistance on our part will no doubt be productive of more business as the gas companies are called on to repair ranges which have been sold by someone other than themselves, and it is to simplify this work on their part that you are asked to give consideration to these subjects.

The above report covers the activities for the year and it is hoped that some good has been accomplished for all and that the proposed work will be undertaken.

INDUSTRIAL SECTION

H. O. LOEBELL, Chairman — F. F. CAULEY, Vice-Chairman

C. W. BERGHORN, Secretary

The Industrial Gas Section's Policy for the Year

IN ACCEPTING the Chairmanship of the Industrial Gas Section, Mr. H. O. Loebell said: "If I am not mistaken, the President of this Association has the right to change the chairman of any section as elected if he does not suit him. I feel that the best way that I know of to know that I am surely going to have the job, is to tell you what I expect to do and if anybody has any objections, he may report me to the president. If he agrees with the objections, then I will be out before I am in.

"Those who have known me for a long time know that I have ideals about the industrial end of the business. Those ideals are shared by the majority present today I am sure. The important work, as I see it, is to raise our prestige before the managers of public gas companies to a point where our viewpoints, our ideas and our ideals will be given not only serious consideration but will form the objectives which the gas company should seek.

"Every man who has worked in the industrial gas end of the business knows that in order to bring about the day when every bit of heat that is used in industries will be in the form of gas, some adjustments must be made. There is a gap to be bridged between the economics of the fuel used at present and the complete utilization of gas in industry.

"There is no doubt in anyone's mind, I think, but that the average manufacturer who uses heat in some form or other would much rather use gas because from experience its utilization has proven much more efficient. He also feels that he can afford to pay a higher price for gaseous B.t.u. than for any other fuel. Moreover, the manufacturers of gas burning equipment for industrial purposes have made some strides in increasing the efficiency of their equipment, all of which helps to shorten the gap existing between the cost of production with gas as compared with other fuels.

"But I feel that there is some more work to be done on the part of the gas company—they must give greater and more serious consideration to the value of the industrial consumer and they must proceed along the same lines as the electric companies in making rates and adjusting their manufacturing equipment, distribution, and whatnot, in order to present a much better picture to the industrial consumer.

"Potentially the industrial heating customer is a much greater factor for the public utility gas company than the power consumer is for the electric company. Yet it is the power consumer who has made the electric company what it is today—not because it had greater opportunity than the gas company, but because it had more progressive management. I believe that even at present the gas industry is handicapped by tradition and the progress is very slow. In the Industrial Gas Section of the A. G. A. is the element that has the understanding—to them falls the responsibility of attracting the attention of the management

of the gas companies to the possibilities and the methods whereby the scope of their business can be brought to maximum realization.

"Gentlemen, these are my ideals, and that is the work I am going to try to get every man in this organization and this Section to do. You may feel, perhaps, that that is a pretty big job for us to tackle—to tell the presidents or general managers of our organizations about these things, but that is what you have to do if you are to do justice to yourself, your company and your Section.

"The work, of course, will continue along the lines we have tackled before. We are going to try to inspire the men to greater endeavor, disseminate the knowledge that exists, and accumulate more and more knowledge along the lines that pertain to the utilization of gas in industry. If you gentlemen feel that my ideals are wrong and feel that the American Gas Association cannot stand for this kind of a platform, you report me to the president, and, as I said before, I shall bow to his wishes."

Later he added these few words which are or should be of extreme interest to the readers of the Monthly.

"Everybody here would like to receive information—there is no question about it—whether it be one page, a dozen or a hundred pages. But the big question is—are you doing your part and sending in your information to Headquarters? I daresay that no man in this room has performed his duty in sending in articles that would be of interest to the balance of the gas industry, whether that article be sent to the A. G. A., Industrial Gas, or other magazines. If you send the articles, the publication will be forthcoming. I am satisfied that the A. G. A. Monthly could be made 50% an industrial magazine if articles of value were forthcoming. I know they are looking for articles of interest, so let us talk a little more about what we are going to do and not leave it all up to the other fellow. If every man will pledge himself today that he will write up every unusual installation, I will see to it that its publication is assured."

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Technical Bulletins on Electrical Machinery

The attention of the Association has been called to the fact that the Electric Machinery Manufacturing Company of Minneapolis, Minnesota, issue periodic bulletins of a technical nature which are available to any members of the Association who desire to receive them. Members interested in keeping in touch with bulletins referring to electric machinery and apparatus should communicate with the above Company and have their names placed on their mailing list.

Toronto's Industrial Display Room

The Windows.

The Display Floor.

Growth of Industrial Gas Sales in Southern California*

CHARLES M. GROW

INDUSTRIAL GAS BUSINESS as it occurs in the work of the gas companies of Southern California has several preliminary phases which must be discussed in the elemental form for complete comprehension of our policies and our purposes. Natural gas is to us almost synonymous with industrial gas, thus differentiating us from the conditions which obtain in the industrial field of companies whose gas is entirely manufactured. We do, of necessity, handle enormous quantities of natural, accepting a small profit upon the same and go on our way rejoicing.

And while in this paper we are dealing only with natural gas and its application to the industrial world of the Southland, it must be remembered that the same companies which are distributing natural gas in and around Los Angeles, also generate and distribute large quantities of artificial or domestic city gas. Hence it can be seen that our endeavors are not in one direction alone and that our trials and tribulations are of a twofold nature. We find ourselves forced to delve not only into the mysteries of naphthalene and lamp black but into those of long transmission mains and heavy oil competition as well. We learn to haunt the very footsteps of the domestic consumer for gas to be supplied to his hot plate as well as follow day by day the trend of oil prices and development. Hence we of the Southland claim the right to sit in on any general discussion of every phase of the gas industry as it exists on the coast.

Those companies that are less fortunate than ourselves in having a continuous flow of its principal product largely governed by the will of Providence, are wont to consider as industrial business many small installations which we practically ignore. This does not mean that we are unmindful of the small consumer but rather that industrial gas is somewhat of a problem to be solved yearly, depending upon supply and the price and conditions of competing fuels.

The Advent of Natural Gas

Natural gas was first brought into Los Angeles from Taft and Bakersfield with the idea of boosting the quality of manufactured gas rather than being sold. As the flow is practically continuous and the demand varies according to the seasonal and climatic conditions, the amount of natural gas sufficient to carry a winter load left a large surplus in the summer. The only logical solution of the problem of filling up the large valleys in the curve representing yearly consumption was the development of that branch of the gas business now under discussion.

Hence it can be seen that the story of industrial gas is almost a recitation of the progress of the Midway Gas Company and the Industrial Fuel and Supply Company in their endeavor to invade the oil fields and bring to us the best fuel known today.

We worried along for a number of years with practically the same supply flowing into this city day by day through the long pipe lines into the northern fields. Then came the discovery of the Fullerton and Montebello fields which made their contributions. These sources, however, could not give sufficient gas to

*Paper read before Southern Sectional Meeting of Pacific Coast Gas Association, July 12, 1924.

carry a very large portion of the industries through the winter but necessitated their change back to oil. In quite a number of cases this was easily done but in the cases of some of the more specialized industrials, where gas was more intimately connected with their needs, it worked a considerable hardship. Then followed the realization that industrial business is a field for expansion in itself, and this fact coupled first with the need of keeping pace with the civic development of Los Angeles and second with the desires of young progressive companies, ambitious to get ahead, brought on a campaign of construction of transmission lines such as is seldom seen anywhere. At that time the maximum supply was approximately 43,000,000 cu. ft. per day, flowing through transmission mains 126 miles long and under an initial pressure of 400 pounds per sq. inch.

In the summer of 1921 the Midway completed a 60 mile stretch of 12 inch main, bringing in an additional 8,000,000 cu. ft. per day, which was thought at the time to be a quantity sufficient to carry us for a long period. But you will remember the winter of 1921-22 was the worst or the best year that Los Angeles has ever witnessed according to the angle of view taken. During this period the domestic drain was so heavy that it was necessary to shut off practically all the industries and then wonder when the weather man was going to pursue a policy of leniency. Then it was that we began to look askance at the brand new Sante Fe Springs and Signal Hill Oil fields which are both in their infancy. It is not at all difficult to understand why the management made ready to expend hundreds of thousands of dollars just as soon as the new fields were assured and the investment justified.

During the spring of 1922 the industrial business was taken back on the lines as fast as the domestic consumption fell off, thus carrying out with a remarkable degree of success the idea of holding a uniform sendout curve. In other words, to speak in the vernacular, we believed ourselves to be "sitting on top of the world."

Oil Prices Break

But in May, 1922, there started a disturbing condition over which we had no influence whatsoever, but one which affected us vitally, the beginning of the present broken oil market. Oil up to that time was to be had only at a premium, certainly not at a sacrifice. Due to conditions of over-production and internationally disturbed markets, the big companies saw fit to make a drop of 25c per barrel of fuel oil. This was followed shortly by another drop of 25c, bringing the standard price to $1.00, effective Aug. 7, 1922. In order to meet competition with the first cut a small discount was allowed on all industrial contracts, with the exception of those on the preferred list established by the Railroad Commission. The second cut was met by drawing up of new contracts which allow for an automatic return to the normal conditions dependent entirely upon the recovery of the oil prices.

This last cut, however, was not sufficient to place us below the cost of oil as a fuel but merely showed a recognition on our part of the fact that gas as a commodity is subject to the same general market and economic conditions as are less romantic substances. We are glad to be able to state that only a few large industries were lost by us at this time due to an extremely low fuel oil figure which precluded competition. Further trouble was prevented by constantly feeling the pulse of the various concerns and doing as much as possible to increase their efficiencies.

Service Important

It is our opinion that out of this dilemma has come a new phase of the work which will do much towards increasing business with present consumers and helping to secure new business in the future. We now realize the value of service and the importance of general tests run upon certain features of plant operation which are actually only incidental to the burning of gas. The desire of our companies to help out the consumer has certainly done much to make the visit of the collector more pleasant. Again co-operation scores a victory.

But now we have another outlay of general conditions presenting an ideal gas situation. In January and February of this year John D. saw fit to raise his fuel oil by two consecutive jumps to $1.40 per barrel, thus making it possible for us to sell the idea of gas on its merits and prove its superiority by means of the fuel voucher. We have expanded in amount of gas handled until our facilities are capable of handling between 200 and 300 million cu. ft. of natural gas per day. With tremendous quantities of gas available, at a considerably lower pressure than a year ago to be sure, it is merely a question of compressor plants and market.

Power Lands Taken On

In years previous the gas companies have had a considerable volume of business helping out the industrial end in the form of oil well drilling. But now that the great drilling program has slowed up we have found ourselves somewhat at a loss to know how to increase the industrial sendout to its former figure. Such an accomplishment is made easy this summer by the misfortune of the Southern California Edison Company, for the lack of water means additional steam plants and these are being fired with gas. The three principal steam plants of the locality are now using gas fuel and are pulling in the neighborhood of 50 million cu. ft. per day, and generating approximately 2,500,000 k.w.h. per day. The Edison has found it necessary to go so far as to take over the old Pacific Electric Plant at 6th and Alameda Sts., Los Angeles, which was withdrawn from active service 12 years ago, but by making a few changes and installing gas equipment, they are now using 7,000,000 cu. ft. and generating 330,000 k.w.h. per day. Now they are negotiating with practically every isolated generating plant in the community, big and little, with the idea of swinging them into the line to help keep Southern California the "white spot of the world" literally as well as figuratively.

In addition to the large power loads we find that the force of circumstances is causing many concerns, with whom we have been dealing in the past on gas engines, to make favorable decisions, and place orders for engines as their principal power units. The engine manufacturers on the coast are completely swamped with business and the eastern companies are finding ready market for their prime movers and the whole situation dwindles down to the question "when can you make delivery?" Many local plants are making these changes in the light of temporary service only, but experience has shown us that when they find that their gas power bills are running from 50 to 60 per cent under their electric bills, that at the end of the electric power shortage, they will not only maintain their gas equipment but go as far as to place their entire load with us. Again we prove the old adage that many times "It is an ill wind that blows no one good."

Some Industrial Uses for Gas

So much for general information. Now we will bring to your attention a few uses of gas which are and will be making for big business in the future. Probably one of the most interesting of all industries in the Southland is that of clay products. In "ye good old days" it was thought necessary to import all clay bodies for specialized products from some foreign port, paying all sorts of duties and incurring as many delays. But now it has been found that San Diego and Riverside Counties have ideal clay bodies, the industry here has taken a new lease on life and is growing by leaps and bounds. We firmly believe that in the near future the vicinity of Los Angeles will become the center of the clay industry largely because of the proximity of raw products and of the great quantities and quality of the indispensable fuel—natural gas.

The old type of periodical kiln is slowly being relegated to the scrap pile, its regime is almost over and in its place has risen the new railroad tunnel type kiln. This is as the name implies, a tunnel about 400 ft. long through which specially built cars carrying the ware pass from atmospheric temperature to 2100 to 2300 degrees Fahrenheit and then emerge from the outlet end 72 hours later, completely burned and only slightly hotter than can be comfortably handled. The cars follow definite schedules and the operators know at all times exactly through what period or stage of burning the ware is passing and can govern their heats at the central firing zone accordingly. Seven such kilns are now being used here for burning pressed brick, terra cotta, ornamental tile, porcelain toilet bowls, high grade roofing tile and the like and more are being built. Because of reduction of radiation losses to the minimum, one ton of ware can now be burned with 2600 cu. ft. of gas as against 6500 cu. ft. with periodical kilns, or a saving of 60 per cent on fuel cost alone.

Great numbers of tests and experiments on ornamental tile such as is known by the trade name of Batchelder Tile have shown conclusively that oil, with its sulphur content and with its other objectionable features of burning, cannot compare with good clean hot gas and quite naturally in this field we find no further competition.

The glass industry is now learning to use the Los Angeles harbor to bring in its sand from the Orient thus precluding the need of long railroad hauls. There are a great number of such plants on our lines now and many more to come.

The industrial service is divided into two main classes—first, straight sale of gas to industrials and in the classification we find that there are approximately 55,000 boiler horse power equipped for gas. In the second classification we have the big electrical companies and some of the big oil companies with whom special contracts are in effect. Their steam load alone amounts to 78,000 boiler horse power making a grand total of 133,000 boiler horse power operating on our lines in the Southland. But if we were to include oil companies with their refineries, pumping plants and drilling rigs that are operating on their own gas, even this figure would be greatly increased. It can be readily seen that gas has been taken as the ideal fuel and carries a greater percentage of the industrial load than any other fuel.

In the laundry business we find that gas is helping to clean 200,000 pieces of soiled linen per day. In the terra cotta line we burn 344 tons of ware per day. Our brick companies are producing approximately 1,300,000 bricks per day, all burned with gas.

We are now experimenting and getting along very successfully with gas in the long calciners of the Riverside Portland Cement Plant. The work required the design of a special burner which would handle 50,000 cu. ft. of gas per day. By the use of gas we have been able to produce 10 per cent more clinkers than the same unit ever produced on oil.

Conclusion

And so we could go on and on indefinitely almost, recounting interesting cases here and there in our industrial progress, we of the Southland fully realize our blessing and are doing our utmost to "make hay while the sun shines." To this end we are more and more specializing on the improvement of burning equipment and the increasing of efficiencies for we are not unmindful of the fact that long lived business is the essence of success, that the tortoise may outrun the hare and that, in accordance with nature's law, our present supply will some day dwindle to the point where our present small consumer will then be our big one. But we firmly believe that, with a policy of service pervading all of our industrial attempts and endeavors, we are building the industrial game on a solid foundation which will continue for many years to come.

As a summary, our committee concludes and submits for your serious consideration the suggestion that—

The principal applications of natural gas in the Southern territory may be listed in the order of their relative importance.

The respective importance of each particular use being determined by carefully weighing operating conditions peculiar to each class or use—such as—

Efficiency obtained in the use of gas.
Number of hours continuous run.
Load factor.
Essential use of gas as fuel, and last but not least the rate of return.

Applying this rule our experience guides us to classify the different uses of Natural Gas as follows:

1. Internal Combustion Engines.
2. Bakeries.
3. Low Pressure Steam Boilers.
4. Metal Pots and Dipping Tanks.
5. Glass Factories.
6. Clay Products Plants.
7. Porcelain Enamel Kilns.
8. Glazed Brick and Tile Plants.
9. High Pressure Steam Boilers.
10. Red Brick Kilns.
11. Gasoline Refineries.
12. Cement Kilns.

Increased revenue will be directly reflected in the successful efforts of the New Business Department of our companies in increasing the sale of natural gas through the medium of the more profitable classes of service as indicated above, rather than continuing the present method of selling too large a percentage of the total sendout at the lowest rates and as surplus natural gas.

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In Memoriam

J. W. Graham, Gen. Mgr., Kitson Co., Philadelphia, Pa.
Arthur A. Wilbur, Asst. Treas., Brockton Gas Light Co., Brockton, Mass.

Marketing Utility Service*

DR. PAUL W. IVEY, Professor of Marketing, University of Nebraska

I AM GOING TO TALK on Marketing Utility Service. Possibly the main reason I have been asked to address this Association is not because I have read about marketing utility service out of books on merchandising in general, but because some little experience I have had in marketing different kinds of merchandise might help me to give some suggestions here which will stimulate thought along the lines in which you are interested.

In talking to a banker a little while ago regarding some bonds, he said, "I would advise you to buy some public utility bonds." I said, "Why?" He said, "They are safer." I said, "They don't bear as large an income, do they?" He said, "No." I said, "Why don't they?" He said, "I will tell you. A public utility has a franchise. They do not run such a big risk of income getting; hence the income does not depend so greatly on management as in industrial concerns." What do you think of that?

Importance of Management

Now, I do not pretend to know anything about your field. I am talking as a plain amateur, a layman, and I lay my cards on the table at the very start. If I know anything about the merchandising business, I believe that in the public utilities in the country, the gas companies, the increased income will depend on management and management alone. Now I recognize that there are a great many gas companies who are depending on a franchise. There are a certain number of people who have to have gas and the income comes in quite regularly because these people have to consume gas regularly. I recognize that there are certain gas companies of that kind. But the gas company that is going to increase its income and justify the stock which it has sold to some of its employees, is in the position of a savings bank. They have sold securities with the understanding that there will be a permanent income. Those men have got to use management in the next five, ten and fifteen years if they are going to increase their income, if they are going to lay by a larger surplus, and if they are going to make the profits which are going to give bigger incomes not only to the capitalists who lend their money but to the management because of the ability consumed in getting these larger profits.

Management is everything. We hear a lot about labor; we hear a lot about capital, but the third leg on which all business stands is management. And the highest salaries paid in this country are paid to managers, who not only are managers but men who are salesmen, who can coordinate the whole industry. By means of labor and by means of capital which they mix up, they produce profits.

Distribution Management

During the last century all industry in this country has been interested in creating merchandise. The best brains in

*An address delivered at the Sixth Annual Convention, Atlantic City.

the United States were employed in manufacturing. Distribution was not thought very much of because it was all that our manufacturers could do to supply demand, and whatever is demanded is supplied. Merchandise was wanted in ever increasing quantities because this country was expanding. Three million square miles had to be filled up with people and those people were demanding merchandise. At the present time in the 20th century I see a change in our emphasis on where the brains are going and where the effort is going. Instead of being put on production—and do not think I am minimizing production for I recognize we have to have lower costs if we are going to have lower prices; if we are going to set aside surpluses we have to have the right kind of costs, and that is dependent on the production engineer, so I am not minimizing that. I am assuming that he is efficient; I am assuming that the century of progress has put the manufacturing end in a superior position. What I am saying is that no human effort in comparison with production has been put into distribution, into the marketing end of utility service. So I am here to say that the organizations that are forward-looking are the organizations that are thinking about marketing the product into which all this money has gone in production.

We have heard a great deal this morning about what is going to happen in the future, so I do not intend to talk about that. But I will say one thing. A few years ago I imagine there were some gas companies that smiled a little when the electric light came in. Of course, you have all heard this; it is nothing new, but I am trying to stimulate a little thought. Electricity was twice as expensive as gas for lighting, and there were some possibly who said that with gas half as cheap as electricity certainly the public would not light by electricity. However, we all know what happened.

In talking to some gas men I see that they possibly minimize the entrance of electricty in another field. Now I am wandering around a good deal and everything I am telling you I am trying to bring out of my own experience. I am an investigator; I am trying to analyze; I am trying to find out what is going to happen. I will tell you why I do not pretend to be an expert in any of these things, because a while ago I heard a good definition of an expert. An expert is a man who is a long ways from home. Now, I am not far enough away from home yet to be called an expert. If I get far enough away I may make the claim.

A while ago I went through one of the largest apartment hotels in a large western city—beautiful paintings on the walls, luxurious oriental rugs, very recently constructed. I went around there with my wife to look at this new apartment hotel. We went into the rooms, and when we got into the kitchen of one of those apartments do you know what I saw? I saw an electric range. And in all the kitchens in that twelve or thirteen story building, in each suite, is an electric range. My wife immediately said: "Well, just look at that, an electric range!" "Why," I said, "is it any better than gas?" "Oh," she said, "yes, they are much better." I said: "Why? Do they heat better? Are you sure that the food will cook as quickly?" "Well," she said: "what difference does it make? It is paid for by the hotel." She never realized that I was paying for it eventually. She said, "I have got some friends that have an electric range and they like it very much."

Now, I know and you know that this electric range does not possibly reach cooking heat as quickly as a gas range. I am not going to argue; I am not knock-

ing electricity at all; I am just trying to think along with you a little. I am not saying electricity is coming in for cooking: I am merely wondering, that is all. And I may be all wrong, as Mark Twain says, a man has a right to be wrong. I claim that right.

House Heating

I said to a man a while ago, a gas company man, "How is the house heating business coming?" "Kind of slow," he said. I said, "Why?" "It costs a good deal more to heat a house with gas, although there are compensations," he said. "What," I asked, "are the compensations?" He talked about no ashes—and I appreciated that, having attended a furnace for a good many years. He talked about less dirt in the draperies and soil on the wall paper, etc., etc. I said, "Does the public know this?" "Well," he said, "I don't know. We have been sending out some material from time to time." I repeated, "Does the public know this?" "I don't believe they do," he admitted. That is the point!

What does the public care whether gas heating costs twice as much as coal? What do the American public care for cost? Will any man stand up and say the average American will question price if he thinks he is getting convenience? Did he when it came to house lighting? And will he question it when it comes to house heating? I want to ask you that.

I asked another gas man, "Are you doing any house heating?" "We are staying a little low on that." "Why?" "If the community starts heating with gas," he said, "we couldn't supply enough gas." Well, now, that is all new to me. A farmer told me he was going to have a fine crop a few years ago. Yes, he said, it was to be a fine crop, but he would have to build larger barns.

Well, does the public understand? Now I am talking about merchandising. One of the first principles of all merchandising is creating this thing called demand, and you have to create demand the same as you create gas. You have got these big tanks filled with gas and you say, "That is our business. We are creating gas." Of course you are. What are you going to do with the gas when you get it? What are you going to do with the possibilities in the field? Are you selling gas? Are you creating demand by means of publicity, by means of stores which handle appliances, by means of home service, by means of Americanization plans, by educational work? Are you selling more gas? That is the point. And are you making plans not to get a 10 per cent increase, not to get a 20 per cent increase —I know some firms right now are considering a 50 per cent increase for next year in some lines.

I was down in Cincinnati yesterday. At a certain sales convention the sales manager talked about a 50 per cent increase next year and has his plans made for a 50 per cent increase, and I believe he will make it. I knew a department store last year that did four million dollars worth of business, and they figure a million dollars increase in business, and I think they will make it. What are we figuring on in the future; that is the point! We all get what we expect in this world. A salesman gets what he expects. I think everybody does. Some people are always saying that there is something the matter with the industry. You get what you expect and some people are always stooping over. They get it.

We have got to adjust ourselves to new conditions. We have got to create demand, if that is the new adjustment which must take place. I will take off my hat to a manager in the public utility field, a man who can create demand just as much as demand has been created for

the things that we are eating and wearing —shoes, clothing, automobiles. Does it take management? It takes management of the highest caliber if you want to increase the sale of gas. Of course, if you want to take the rights of your franchise and merely take orders for gas, it does not take much management.

I am reminded of a story told about the first citizen of our city out there in Lincoln, Nebraska. Perhaps you know who I refer to. A story is told of Mr. William Jennings Bryan, that he was out in the western part of the state and was going to speak in a theatre one afternoon. It was all filled up and people were standing outside in the street, and one man said, "Mr. Bryan, would you mind coming out on the corner lot and speaking where we can all hear you?" He said, "All right," and he went out and looked around and then he said, "I will have to have something to stand on so the people can see me and I can see them." So they said they would get him something. Mr. Bryan was talking to members of the committee around him, and he heard a titter run through the crowd, and he turned around to see what they were bringing him to stand on, and what do you suppose it was? A manure spreader. And as Mr. Bryan mounted that platform he looked the audience over very carefully and solemnly and he said, "Ladies and gentlemen, in my lifetime I have spoken from a great many platforms, but this is the first time I have spoken from the Republican platform."

Now, while I do not belong to the same political party as Mr. Bryan, still I recognize a good story and quick mental come-back and quick adjustment. I am talking about quick adjustments as the need arises. Do the people in this country believe, are they sold on the idea of heating their homes with gas? Are they? I will leave that to you. I think they are not. Is this great Association doing anything towards national publicity? Are the women's magazines being utilized to tell the story of why I should put in a new furnace and spend twice as much for fuel? This is a solemn moment! Here is a great concern down in Cincinnati that has been advertising for years and if you open up a woman's magazine today, you know what you read about; you will see the statement: "It floats." Think of that! You know why they are advertising "It floats." Do you think the American public is sold on "It floats?" Last night I forget how many housewives died off, and I forget how many thousand housewives came into being this morning, and they do not know "It floats." Then there are a large number of housewives who have seen the statement "It floats" but have not proved it. Then there is another larger percentage who proved it awhile ago, but they got a new brand of some kind of soap and they are using that now, and they have to be converted again. Then there are some other people who know that "It floats" and are proving every day that "It floats" but they like to be reminded of it.

National Advertising

Are you using the great channels of national advertising? I am not selling any national advertising. I am connected with no advertising agency. I am not interested in any magazine. In a conference before a certain group of advertising men yesterday when every advertising man said this certain manufacturer ought to advertise, I cast the one negative vote. I was not sure, and I did not want that man spending money unless he was certain it was the right thing to do. As I look at the public utility field—especially the gas industry—if I am sure of anything—and I weigh my words—I say, if I am sure of anything, I believe that the

American Gas Association with its constituent members should advertise to the women of the country at least and make them see the advantage of heating their homes with gas. Possibly also cooking—some of them do not do that.

I wonder whether the architects know that it is a fine thing to put in gas appliances right in the building. Architects seem to have a good deal to do with what is being bought and sold. I wonder how many gas organizations are advertising to the architect, to the builder, the man who molds opinion and who determines what is going to go into a home or into an apartment building.

A few years ago when I was in a certain university town I wanted to get a home; I wanted to rent it. I went into a certain house and there was no fireplace. I had lived without a fireplace all my life and I wanted one, and so I said to the builder: "Why didn't you put in a fireplace?" "Well," he said, "a fireplace is a foolish thing." "Why?" "Oh, I don't have any in my home." "Well, suppose the public demands it?" "Well, they think they want it but I guess they don't." You know, I find that man putting fireplaces in his homes now. He has been dictated to by the king of the country, namely, the consumer, and he is putting it in. He hears his master's voice.

However, I do not believe in merely selling the consumer. I believe in getting all the pressure you can to bear. Sell the consumer through national advertising. Sell the employees in your establishments through the right kind of educational work. Sell the architects and the builders. Sell the industrial managers, of course; that has been talked about. Use every effort if you are a number one manager to add some more load and build to meet that load anticipating the possible load as you experiment and see what demand creation produces.

I think that the American Gas Association can afford to go to the finest, most efficient advertising service in the country to get this before the public.

What National Advertising Has Done

In 1906 we had an over-production of prunes in this country. Do you know the American people at the present time are eating two and one-half times more prunes than they did per capita in 1906? Do you know why? Something happened. Housewives one morning opened up the magazines, and do you know what they saw? They saw prunes advertised; they saw prunes given a personality; they saw prunes explained; they saw recipes which resulted from the use of prunes. They saw the whole thing and so we are eating two and one-half times as many prunes as we did in 1906. I think they are all right for us too.

Do you know what the ad was? When I was a boy and went to the store I asked for prunes and he took a scoop and scooped the corners off the prunes and put them in a bag and shoved them across the counter to me like a brick. Prunes were only ordinary things. If you wanted to call a person by a name, you called him a prune. You do not hear that any more now. Prunes have been put on a pedestal. Oh, yes, they have been given a personality. Do you know what this ad was? I saw mountains in the background, slowly setting sun, long rows of growing trees, over here a package of prunes, down here a piece of pie, and over here a sales talk. And do you know what the American public found out from that ad? They found out a startling fact; that prunes were kissed by the sun. And if you did not believe it there was the sun giving the prunes the last kiss.

I am merely mentioning this. It sounds a little foolish and it is. I get a lot of fun out of the work I am doing

and I hope you do too. It seems a little foolish, but when you can get the American public to do the things that are being done—I wonder when you can get them by the millions to heat with gas? I am wondering, that's all. I wonder whether any of you have ever tended a furnace. We all live so much now in cities and apartment buildings, I wonder if you have ever attended to a furnace. I tended a furnace in college and I tended a furnace after I got married. I hate furnaces. I have tried all kinds of sprinkler devices to wet down the ashes so I would not get ashes all over me, but they always formed a little thin crust and the dust came up and I always said things I should not say. I always got the wrong kind of coal, something was happening to the furnace. Do you think the American public would pay more to get rid of all those things? They will if they understand. If they do not understand they will not. What are you going to do about it? That's the point. Are you going to market the way modern things are marketed, or the way things were marketed a century ago?

Raisins—in 1913 they had an overproduction of raisins out on the Pacific Coast. Do you know that we are consuming nearly three times as many raisins as we did in 1913? There may be a raise in—. And do you know what I saw. Out in Oklahoma a while ago I saw a tall gray-haired man walk up to the cigar counter of a well-known hotel and I thought he was going to buy a cigar. He bought a little five cent package of raisins, opened them up in the hotel lobby, absolutely unconsciously, and began eating raisins out of that box—an unheard of thing five years ago. Do you know why he bought them and opened up that box in the hotel lobby? I will tell you why. He opened up a well-known five cent magazine and he looked in there, and do you know what he saw? A statement: "Have you had your iron today?" And he said, "That's right, by George, I need some iron." So he bought iron, five cents a package.

Now there is a little iron in raisins but it is almost infinitesimal, but it is there and raisins are good for you, I will admit. Think of what has been done in a field like that. They are made like a confection. A while ago I saw a two-pound box with a beautiful cover on it. I thought it was candy, and do you know what it was? It was raisins. Times are changing, are they not? The time is coming when if we want to give our wives or sweethearts or a friend a present we will give them a box of raisins. This field of salesmanship and advertising and marketing is getting interesting.

Is it intricate? Oh, sometimes I kneel down and worship the technical man who knows production, and I will continue to worship him. Why? I do not know anything about production on the technical side in the gas industry. Do you think that the sales side is complicated? Do you think it has as many parts to it? Do you think it should have as much study? I will leave that to you. What is the use of manufacturing a thing unless you can sell it in ever-increasing quantities at ever-increasing profit? What is the use unless you can increase the per meter consumption of gas?

Salesmanship and a Hammer

Now in this business of advertising, this business of selling, you have to have a sales talk. I am going to tell you a story about a hammer, and it is going to bring out a very important point. If I am known in the United States at all I am known for this hammer story and that is about all. I want you to think of gas appliances. I want you to think of advertising, not merely on billboards.

"If it's done with heat you can do it better with gas"—that is all right but now I want you to think a little further. A few years ago I went into a store in the state of Indiana to get a hammer. I was on a lecture tour at the time. Of course I have been studying salesmanship and I have sold myself, but at that particular time I wanted a hammer. I went into the store and the salesman put a hammer in my hand and he said, "That's a mighty fine hammer; that's a real hammer. We sell a good many of those." I looked the hammer over, lifted it up and brought it down as though I were going to hit a nail, balanced it in my hand, wondering if it were better than any other hammer, whether I should buy this one or some other one on the counter or behind the case. Finally I looked at the man and he looked at me; I looked at the hammer and he looked at the hammer, and then we both looked at each other, and then he saw I was not going to buy it unless he said a little more, and so he said, "That's a mighty fine hammer; that's a real hammer. You can't go wrong on that hammer."

Well, I looked the hammer over a little more; lifted it up and put it down, balanced it a little, wondering whether I should buy this hammer or some other. Then I looked at the salesman and he looked at the hammer; I looked at the hammer, and we both looked at each other, and finally, gentlemen, he brought in his final closing sales talk, and do you know what he said? He said, "It's a mighty fine hammer; it's a real hammer. You can't go wrong on that hammer."

I said to myself: "Ye gods, is that the way they are trying to sell merchandise in the United States of America?" I went into 100 hardware stores asking to look at hammers, and, do you know, no salesman could tell me much more about a hammer than the one in that first store. All you have to do is stop in a half a dozen hardware stores in Philadelphia, or somewhere else, or in your home town, and ask to look at hammers.

A little while ago a hardware man said to me, "You are lecturing here, are you not?" "Yes," I said. "Well, do you say anything in your lectures about hammers? I have had more people come in and look at hammers than ever before." I said, "Do they buy them?" He said "No."

A little while after that I went into the largest hardware house in the world located in Chicago. A salesman took me all over the place and showed me everything, and told me the gross sales, etc., and a bright idea came into my head. I said, "By the way, what are your sales of hammers?" "Hammers?" "Yes, hammers." He thought I was crazy, I guess. I saw I had to impress my personality upon him, so I said, "You don't know me and I don't know you, but, if you knew it, you are now looking upon the greatest hammer expert in the United States. That's me." That seemed to impress him a little so he introduced me to an official of the organization and that official told me the gross sales of hammers for the largest mail order house in the world. I marveled. I said, "Do you sell all that in just hammers?" "Yes." "Would you mind letting me see the hammers?" "No," he said, and he brought out the hammers. I will never forget them—one, two, three, four. I picked up the first hammer; it looked like an old friend of mine. I looked at the other hammers and they looked like old friends. "Why," I said, "these look like ordinary hammers. How in the world do you sell so many of them?" "You will find the reason for that if you look in the last issue of our mail order catalogue." So I went there.

This was several years ago, and if you look up the large catalogue they have is-

sued you will find a sales talk regarding a simple thing like a hammer very similar, with one slight exception, to the sales talk I am now going to give you, which I read in their catalogue several years ago. This is what they said. First, "This hammer is full nickel-plated." "Ah," I said to myself, "I am sure some of those hammers I looked at in some of those stores were full nickel-plated." You know them when you see one—oh, yes, in a general way, but here is a company that does not believe it; they tell you the hammer is full nickel-plated.

Second, "The handles are made of selected second growth hickory." You know, that in over a hundred stores, ladies and gentlemen, I hardly think there was a store which came anywhere near giving a point of that kind. Now there were some salesmen who said to me: "That is a mighty fine hickory handle; that is a real hickory handle." I do not know the real hickory probably as distinguished from the artificial.

Third, "The handles are mahogany finished." No one told me that. I said to myself, "Sure some of those hammers must have been mahogany finished." Here is a company that does not believe in generalization; they believe in accurate bull's-eye hits.

Fourth, "This hammer is made of crucible cast steel—forged from crucible cast steel." Now, as an ordinary customer I do not know what crucible cast steel is, but the chances are it must be *some* steel.

Fifth, "The faces and claws are tempered just right." Is not that beautiful? Is not that artistic? What comes into your mind? "I can pull the head of a spike with this hammer and the claws will not break." Is not that one of the most important functions of a hammer? I do not want to go into my own history, but I was nearly sixty years old before I knew that a hammer had more than one claw.

Sixth, "The claws are split to a fine point." What comes into your mind now? "I can pull the finest nail with this hammer." Have any of you tried to pull a fine nail at your home with the hammer you have and have the nail slip through the claws, and you try it again and the same thing happens—three times, and then you pay the expenses of the hammer. Here is a company that says, "You can pull the finest finished nail with our hammers."

And lastly, "The handles are put in with iron wedges so they will not come loose." How many of you have ever used a hammer and had the head fly off endangering somebody's life around you? At one time I used to think it was one of the functions of a hammer for the head to fly off.

Do you see this hammer? Full nickel-plated; the handles are made of selected second growth hickory, and mahogany finished; made of crucible cast steel; faces and claws tempered just right; claws split to a fine point; handles put in with iron wedges. Do you see it? Do you know what kind of an experiment in research work I have done? I have gone into a retail store and had a flesh and blood salesman put a real hammer into my hands—and by the way, I say a flesh and blood salesman—how do I know he is flesh and blood? Cut him in the cheek and he will bleed. I have had a flesh and blood salesman put a real hammer into my hand in a retail store and I have actually seen less, ladies and gentlemen, when I looked at that real hammer with my real eyes, than when I read about the hammer in the mail order catalogue. I wonder whether I have a point there. I will take my hat off to a company 500 or 1000 miles away that can make me see a hammer clearer when they put a cut

of it on cheap paper with a description underneath it than when I actually have the hammer in my hand in a retail store.

Education and Salesmanship

And that brings me to one of the most important principles of all salesmanship and marketing, and that is this: Customers do not see what they look at; they only see what they are educated to see. My friends, the customer does not know any reason why he should buy your gas service for heating purposes unless you tell him. You cannot even understand a hammer without being educated regarding it. How much more must a customer be educated regarding the appliances for gas and the need for gas heating purposes.

Now I do not pretend to have discovered this remarkable principle, but at least I have exploited it. This principle to me is a discovery, as much a discovery as that of electricity or anything else. We take things for granted. We think the people know why they should use things. You do not know anything in this world excepting what you are educated to know. I do not mean in school. I mean educated by experience, by your fellowman, by contacts you make, from books, from all sources that a person can be educated from. And a person can never say that they have an education. I heard a man say a while ago, "I have an education." It is just as foolish to say you have an education as it is to say you have a bath. You had one but it is no sign you have it now. In support of that principle I will recall to you, "It floats." You never know anything except what you are educated to know.

Is not that a marvelous principle? Pretty simple, is it not? "You come here all the way from Lincoln, Nebraska, to tell us this?" Yes, that's the big principle I am working on. I am working for certain manufacturers. I could tell you about some increases in sales if I wanted to tell you about my work but I do not care to. The customer is willing to lay his money down on the basis of the value he sees. It costs twice as much to use gas —I am willing to pay twice as much if I think I am getting twice as much. You will have to be accurate in all these different kinds of sales talks, and I am advocating sales talks and the right kind of publicity.

When the Iver Johnson safety revolver came on the market they had a remarkable revolver. But if you have the most remarkable thing in the world and people do not know about it, it is not remarkable. A thing is only remarkable when a customer believes it is remarkable. They did not believe this revolver had the safety qualities. They advertised, "Accidental discharge impossible." The average man said, "I don't believe it." Now, the only point to salesmanship in advertising is to make people believe what you say, and also make them see value. After a while they said, "We have got a remarkable article here and we can't make the public see it," so they decided to make it a little stronger and so they came out with, "Accidental discharge absolutely impossible," and nobody believed it.

Finally they called in an advertising man. Do you know what that advertising man said? "You advertise that you can't discharge that revolver, absolutely—accidental discharge impossible? I don't believe it." The man picked up a loaded revolver; with all the force he could he threw it up against the safe and it did not explode. The advertising man, very much aghast, walked over and picked up that revolver and looked it over very carefully, and his eye accidentally caught sight of the little tack hammer on top of the safe. He picked it up and hit the

hammer of the revolver, and at that moment was born the idea which put the idea across, and he said, "Hammer the hammer."

When I say to you "Accidental discharge absolutely impossible," that is my viewpoint; I am the manufacturer. When I say to you, "Hammer the hammer," I am saying, "Now, my friend, you just take a hammer and hammer the hammer." That is your viewpoint. It is simple and yet very complex.

"If it is done with heat you can do it better with gas"—whose viewpoint is that? How many people believe it? Do I say to myself, "Hooray, it's right!" Or do I say, "I doubt it; I guess I will keep my old coal furnace." Everything has to be accurate. I believe in accurate sales talks. I believe there is a right way to sell goods and a wrong way, and I believe words are conveyors of meaning.

This reminds me of a story told about old Webster, author of our famous dictionary. One day as he was kissing the maid he was caught by his wife. His wife drew a gasp and said, "Why Mr. Webster, I am surprised." Mr. Webster drew himself up in all his great dignity and looking at Mrs. Webster with piercing eyes he said, "Mrs. Webster, when will you ever learn the correct use of the English language? You mean you are astonished. I am surprised."

Know the merchandise. Know what it will do for the customers. Make everybody feel what you are trying to get across. Show what the article will do for the customer, and keep hammering it in, that is all. If that campaign is carried on in the right way people are going to be converted to the uses of gas.

Electricty is being advertised. You pick up any magazine and you will see in there electrical appliances. Pick up a good many magazines and you will never know gas existed. As old Hugh Chalmers used to say when he sold cash registers, when he convinced a merchant that he needed a cash register and he would say, "But I don't believe I can afford it," Mr. Chalmers used to say to him, "My friend, you say you need it—well, if you need it you have paid for it whether you purchase it or not. Since you are paying for it of course you might as well have it."

If you need a new appliance in the production of gas you will pay for that new appliance whether you purchase it or not. If you need new machinery in the distribution of your gas, in the marketing of it, you will pay for it whether you purchase it or not. An interesting principle of salesmanship, is it not? Remarkable how it applies!

Just a few more words. I realize that you have been sitting here for a long while, and I do not want to keep you too long. Here we have publicity. Here we have our gas appliances. I wonder whether all the gas companies over the country are putting them in their own stores, whether they have got the right kind of salesmanship behind them. Take the home service work—some organizations I know where the consumption of gas per meter has tended to be increased somewhat by the extensive home service work, getting women interested in the consumption of gas not directly but indirectly through cooking and the right kind of methods of cooking. It seems to me there are great possibilities along that line.

The Employee

The last thing I want to talk about is the employees themselves. Recently I have been conducting some classes for some public utilities and gas companies up in Milwaukee and in Chicago. I am trying to find out just what is in the minds of some of these people, and I find

that the average employee can be taught. Now that is a startling discovery to me. After having been teaching off and on for the last ten years, that certainly is a startling discovery. I have discovered in the classroom what I have heard business men say so often, "I tell you, Mr. Ivey, you can't teach our bunch." Why, one merchant said to me a while ago, "They ain't got no brains!" I find that our salesmen have brains. They have mental capacity. Those of you who are exploiting your gas supply and your gas possibilities, are you exploiting the mental activities of your employees? I know some manufacturing establishments which are running at capacity and minimum costs so far as the plant is concerned, but so far as exercising and using and exploiting the maximum capacity of employees, they have not even commenced to do that. Your biggest asset, I think you will agree with me, is the minds of your employees; and water cannot run up-hill and an institution cannot grow any larger than the men in it.

If your institution is not growing, look at yourself. All these gas men—you say, "What can you do with them?" You can educate them. I know some customers that do not even like the way the gas man raps on the door and shouts, "Gas man!" It scares them to death. One woman said she trembled in her shoes every time she heard it—a nervous woman. Now, there is a way to announce that he is there. Oh, yes, there is salesmanship even in the man who reads the gas meter, the way the girl calls on the phone, the way kicks are taken down, the way the organization works together, the way these foreigners who cannot speak the English language are welded together by the Americanization and Educational Department and made to love the company and the ideals for which it stands. Molding a body of employees who are putting back farther and farther the idea some of the people have regarding public utilities: that they are exploiters of public privilege.

Are you behind your Educational Department 100 per cent? I know technical men who have emphasized the technical side so much that they sneer at educational work. I know in some cases industrial men trained in good universities walked up to the manager of an industrial plant, and the first thing they did was to make their mistake on approach. They knew technically the business but they could not interest him because they did not know how to handle him. What does it profit a man if he gain the whole world and lose his own soul? What is the use of having all the technical knowledge in the world and still not be able to sell it in maximum quantities.

Salesmanship must be recognized if it is the right caliber. Cooperation among employees must be taught. Their minds must be stimulated to work. William James, the great American psychologist, says the average American is using 10 per cent of his brain power; 90 per cent nobody home. Some indictment against the American people, is it not? Suppose you can get your employees to use two more per cent? Some of you may say, "Well, they will demand more wages." I am in business just far enough to know that oftentimes the higer-priced sales workers are the cheapest. I know it is very short-sighted for the manager to say he has to raise his scale if his people are educated. If they are educated the turnover is less; they will see things about that business, in correcting mistakes, etc., that you will never see yourself. How do you know that in your organization of several hundred or several score you are not developing somebody who will be the next chairman of your Board of Directors? I know some executives who are

afraid that men under them may jump over them. I do not suppose there are any here, but I have seen that fear. Keep the man under me just as ignorant as possible. That is what the Czar of Russia tried to do. It always causes explosions.

I am making a plea for education because I am in education and I believe in educational work, and I see the possibilities of it. Sell the public; sell your employees; sell every member of the whole organization. Have a complete understanding. That is what I am pleading for. Some organizations try this a little too late. The grocery industry in this country is very much disorganized. Why? They did not see the chain store coming some years ago. Some of them talked about it ten years ago and the grocers thought they were foolish. In many cases it is too late. In Columbus, Ohio, 80 per cent of the groceries are distributed through chain stores. It reminds me of the story of Sambo who was about to be hung, and as he was walking to the platform the warden said, "Now, Sambo, before we launch you into eternity is there anything you have to say?" Sambo rolled his eyes and said, "No, boss, except this: this will sure be a lesson for me."

Well, it is a little late for some industries. I was talking in Cincinnati yesterday where the chain store has not touched. I was telling them the chain store was coming. I see consolidations occurring. We have had consolidations in production. We are going to have the same thing in distribution some of these days. We are getting it very rapidly in drugs and groceries. Times are changing. The man who says we can go on as we have been in the past—I am certain that man is going to be fooled. The man who says we can produce gas without educating the public how to use gas, that man is shortsighted. He is an order taker if he is an executive; he is not a salesman, and the biggest and highest salaried men in this country, that are managers, are salesmen too. I could mention some of them. The men who have made America have not been merely executives; they have been salesmen who knew how to sell their products. The biggest presidents of the United States have been salesmen, men who were not only brainy but men who could get their ideas across and make the public love them—at least for four years.

In closing, I want to thank you very much for asking me to address your organization. I do not pretend to know much about this business, but I am merely trying to stimulate thought. When I was asked to speak before you I felt it to be a compliment and I want to thank you again. If I have stimulated any thought in your minds, whether you agree with me or not, I will feel as if the time we have spent here has not been wasted.

* * *

The Miles Between

All A. G. A. letters for points to which delivery will be facilitated by using the transcontinental air route are now dispatched by United States Air Mail Service. From the New York Headquarters to the Pacific Coast the miles between are coming to mean less and less as the time necessary for communication is reduced. This recent practical development in the science of transportation will contribute much to the value of the Association's service to its members in the far West and on the Pacific Coast.

TECHNICAL SECTION
R. C. CORNISH, Chairman J. P. HAFTENKAMP, Vice-Chairman
H. W. HARTMAN, Secretary

The Removal of Tar from Gases

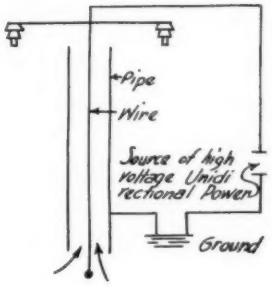
By the Cottrell Electrical Precipitation Processes

N. W. SULTZER and C. W. HEDBERG, The Research Corp., New York, N. Y.

IN THE MANUFACTURE of practically all forms of artificial gas, such as water gas, coal gas, coke oven gas, iron blast furnace gas, or other gas produced from a carbonaceous fuel, certain impurities are carried over in the gas from the source of generation. While these impurities will vary to some extent in both quantity and composition with the method of gas generation, nevertheless, they may be segregated in three general groups. *First* are those such as dust and ash that are present in the hot gas as finely divided suspended particles; *second* are those such as tar and the less volatile oils which are present in the hot gases as vapor but condense or "fog out" as finely divided mist or fog particles when the gas is cooled to atmospheric temperature; and *third,* are the more volatile products such as hydrogen sulphide, naphthalene, benzol, etc., which are present as vapors even when the gas is cooled to atmospheric temperatures. These impurities may not only interfere with the ultimate gas combustion and distribution if not removed, but also may have a distinct commercial value as by-products which well warrant their recovery.

As will readily be concluded, the removal of these impurities presents two entirely separate and distinct problems. For the removal of the highly volatile or gaseous impurities as noted under the third group above, chemical treatment offers the only satisfactory solution. No attempt will be made in this paper to discuss this phase of gas purification. The removal of the suspended particles—whether suspended particles of dust in the hot gas, or condensed tar mist or fog in the cooled gas—are more or less analogous. A method for removing such particles that is receiving favorable consideration will be discussed herein, namely, the Cottrell Electrical Precipitation Processes.

The Cottrell Electrical Precipitation Processes are an electrical means for removing practically any kind of finely divided suspended particles from gas. We may conceive the simplest apparatus to consist of a small pipe 6″ diameter and 9′0″ long through which the gas carrying in suspension material to be removed is passed. Down the center of this pipe a wire is suspended from a framework insulated electrically from ground. Ordinary low voltage alternating current is stepped up by means of a transformer to about 40,000 or 50,000 volts A.C. This high voltage alternating current is then rectified by means of a rotating commutating device to a high voltage unidirectional or a form of direct current. One terminal of the high voltage unidirectional current supply is connected to the



DIAGRAMATIC LAYOUT OF PRECIPITATOR

Fig. 1.

wire suspended in the pipe and the other terminal is connected through ground to the pipe. When voltage is applied a corona or an electrical field is created in the pipe around the wire. The gas passing through the pipe is ionized and the suspended particles are driven out of the gas stream by this electrical force and collect on the interior of the pipe or wire. (Note should be made at this point that the suspended particles are actually forced out of the gas stream by the high voltage unidirectional current field—high voltage alternating current will not drive out the suspended particles but will simply cause them to agglomerate.) A commercial size installation of these processes for handling any volume of gas can therefore be constructed by using a sufficient number of pipes so that the necessary velocity of gas through the pipe can be maintained.

The Cottrell processes have a wide application for removing suspended matter from gases. For years they have been considered a standard method for collecting fume and finely divided metal compounds from gases from smelting and refining furnaces in metallurgical plants. Many such installations are now in use collecting such metals as lead, tin, zinc, copper, gold, etc. Likewise, they have had a wide application in chemical plants and oil refineries not only collecting acids such as sulphuric, nitric, and phosphoric—from manufacturing operations but also purifying SO_2 gas, by removing dust, acid mist, etc., to permit subsequent use of gas in acid manufacture where a clean gas is essential. And of especial interest to gas manufacturers these processes have been applied to combustible gas cleaning and several commercial plants are now in use removing tar and oil from various kinds of manufactured gases. These last will be described in full detail so that the gas manufacturer may understand how this equipment is installed and the advantages that may be realized.

From the above brief summary of the commercial application of the Cottrell processes it will be noted that practically any form of suspended material can be collected irrespective of whether it be solid or liquid. Practically, the only manufactured combustible gases that will carry in suspension an appreciable amount of solid particles, such as dust, ash, etc., are producer gas from coal fired producers and the gas from iron blast furnaces. The former being a rather limited field, and the latter having been discussed in several papers before meetings of blast furnace operators, will not be described in this paper further than to mention that quite some progress has been made towards equipping several blast furnaces with the Cottrell processes. Further discussion in this paper therefore will be devoted to the use of the Cottrell processes for removing tar and the less volatile oils from combustible gases.

The advantage of having a gas with a minimum tar content entering the purifying system where the volatile substances are removed—whether it be a

wet or dry purification system—is fully appreciated by gas manufacturers. In a wet purification system tar carried over by the gas will ultimately clog up the interstices in the coke or tile spraying tower, requiring frequent shut-downs for cleaning out and resulting in variable pressure resistances. In the dry system the oxide soon becomes saturated with tar, if present in the gas which reduces the efficiency of purification. This necessitates frequent shut-downs for repacking of the boxes or revivification of the oxide. All this means high purification charges. It is possible however by using the Cottrell processes to extract the entrained tar and less volatile oils from the gases entering the purification system, thereby reducing purification expense and greatly simplifying the gas cleaning operations.

An installation of the Cottrell processes for tar removal consists of one or more precipitator units and the electrical equipment. The design of a typical precipitator unit for tar removal is indicated in Figure No. 2, this particular unit being of sufficient capacity to handle approximately 7,500,000 cubic feet of gas per day.

The dirty gas enters the outside shell which it fills and then flows upward through the precipitator pipes. Due to the electrical action previously described the suspended tar and oil particles are forced out of the gas stream and collect on the inside surface of the pipes. From the bottom of these pipes the tar and oil

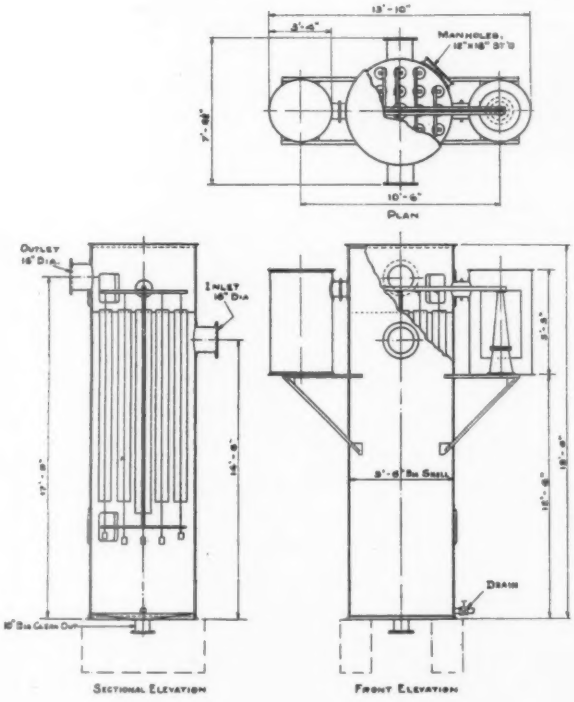
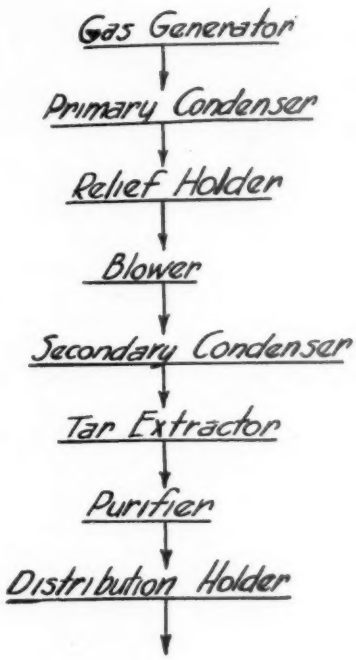


Fig. 2.

trickles into the lower part of the precipitator shell and is conveyed from there through an ordinary seal into the sump. (Mention might be made here that in ordinary gas operations the tar and oil is sufficiently fluid to flow of itself from the pipes so that the precipitator is entirely self cleaning. In the event that extraneous matter is mixed with the tar and oil so that it is viscuous and will not readily flow then a special design of apparatus must be provided. As this condition is seldom encountered no further description of this apparatus will be given in this paper.) The precipitator shell is of steel construction throughout and made gas tight to prevent leakage. A single set of electrical equipment which may be of sufficient capacity to handle several precipitator units requires a ground space approximately 8′ 0″ x 10′ 0″. No further detailed description of the electrical equipment will be given except to state that it may be designed to operate from practically any source of local plant electrical power supply.

The manner in which the Cottrell equipment would be installed in a gas plant is illustrated in Figure No. 3, a flow diagram of a typical plant layout.

In order to permit the entrained tar and the less volatile oil which are practically always present in the raw hot gas to condense or "fog out" as mist, the gas is passed through primary coolers or condensers reducing the temperature to approximately 100° F. To provide for intermittent gas production this raw gas is then usually passed to a relief holder. From the relief holder the gas is drawn by a positive pressure blower and forced through secondary condensers, tar extracting apparatus and purification apparatus into the distribution holder. It is possible that, with the Cottrell equipment for tar removal, the secondary condenser may be eliminated. Such installations, however, that have been made to date have been in plants having the secondary condenser already in place so that no definite information is yet available on how complete tar removal can be obtained without the secondary cooling. The Cottrell equipment for this purpose usually consists of at least two precipitator units. This makes it possible to shut down one or more units when gas production is low.



PLANT FLOW DIAGRAM

Fig. 3.

In order to best illustrate how Cottrell equipment may be applied to tar removal, a brief description will be given of several commercial installations now in use.

At one of the large public utility plants

in the East, a Cottrell installation is now in use removing tar from water gas. This plant has a capacity of 30,000,000 cubic feet per day and was designed to clean gases containing approximately 1.0 to 1.5 grain of dry tar per cubic foot at 60°F. and 30" Hg. The appearance of the Cottrell equipment at this plant is shown in Figure No. 4.

This installation consists of four precipitator units placed after secondary condensers and preceding oxide purifiers and one set of electrical equipment. The Cottrell equipment was placed in operation during August of this year. The gas plant to date has not been producing at full capacity, but with two precipitator units operating and handling approximately 15,000,000 cubic feet of gas per day (each unit handling the approximate gas volume for which designed) the dry tar content in the cleaned gas has been reduced to approximately 0.03 to 0.05 grains per cubic foot—a removal of over 95% of the tar. The operation has been very smooth and no labor has been required further than for occasional inspections by the plant operators. The only direct operating expense has been for electrical power which has amounted to approximately 5 to 7 k.w. or at the rate of approximately 10 k.w. hours per 1,000,000 cubic feet of gas cleaned per 24 hours. An operating feature of this equipment that had considerable weight in its selection in addition to the positive means of tar removal, was the low back pressure. This not only simplified the design and construction of all the gas seals but also meant a saving in electrical power due to decreased load on the blower.

A water gas plant in the West has had a Cottrell installation in operation for about a year. This equipment handles a maximum of 6,000,000 cubic feet of water gas per day and consists of one precipitator unit and one set of electrical equipment. The precipitator unit is located in the same relative position in the gas system as in the preceding example. This installation has maintained an aver-

Fig. 4.

age of 90% to 95% removal of tar reducing the dry tar content in the gas from approximately 8.0 grains to approximately 0.5 grains per cubic foot.

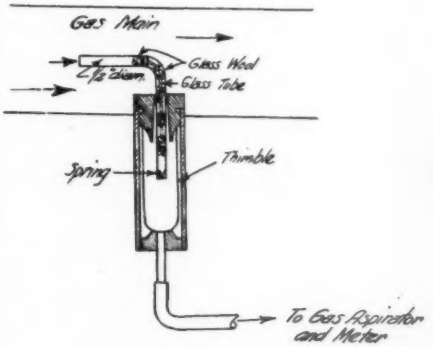
A company has been developing a new type of low temperature gas generator. The tar carried in suspension after the gas had been cooled to about 100°F. is very similar to that obtained with water gas. At a plant in the East using this type of gas generator a Cottrell installation has recently been placed in operation. The Cottrell equipment consisting of two precipitator units will handle approximately 15,000,000 cubic feet of gas per day. To date operation has been quite satisfactory although the gas plant has not as yet been brought up to capacity.

A steel plant has also used the Cottrell equipment for several years removing the tar from a battery of coal gas producers. The Cottrell equipment follows wet scrubbers and centrifugal driers and removes practically the last trace of tar. This is necessary as the gas is ultimately used in gas engines and the presence of any appreciable tar interferes with the operation of valves. Actual tar removed has averaged well over 95% of the tar.

Another Cottrell installation collecting tar from a slightly different type of operation is in a large oil refinery. Here the Cottrell installation, consisting of three (3) precipitator units, removes entrained tar from air and steam blown through a battery of stills in which asphalt is thickened. The design of precipitator is identical with that used in gas plants and operation has been most satisfactory, the tar content being reduced from about 40 grains to about 0.8 grains per cubic foot. Practically 98% of the entrained tar is removed from the gases. The daily recovery of tar amounts to about 75 barrels.

It will be noted that in the description of the several installations above mention is made of the per cent tar removal as well as the actual tar content of the exit gas. Since there is no standard method for tar determination in general use and since there is a possibility for wide variation in results by the usual methods, brief reference will be made here to the test procedures by which results were secured in a water gas installation.

The tar in the inlet gas was determined by adding the amount actually precipitated calculated to grains per cubic foot of gas handled to the amount of tar remaining in the cleaned gas. The gas volume was accurately measured on the station meters and the tar precipitated was drained into cans which were then weighed, sampled and distilled for water content. Since in the course of a test run approximately 200 lbs. of precipitate were collected the average tar precipitated per cubic foot of gas could be accurately determined. For tar in the outlet an assembly such as shown in Figure 5 was inserted in the main and a sample equivalent to approximately 0.1% of the total gas volume was filtered through it and measured on a wet gas



GAS SAMPLING APPARATUS

Fig. 5.

meter. The glass wool tube which had been previously weighed was so proportioned that all the tar was collected in the first and second plugs of glass wool, the remaining plugs showing no discoloration. After drawing approximately a 200 cubic foot sample this tube was dried and weighed and the increase in weight was assumed to be due to tar and water mixture of the same composition as the precipitated tar. Figure No. 6 illustrates the manner in which such tests may be made and tabulated, the data given representing results obtained in an actual commercial installation.

In the case of a pitch or more viscuous tar such as is obtained from gas producers, the tar in both the inlet and outlet gas was determined by using a weighed paper thimble without the glass wool tube.

Actual installation cost of Cottrell equipment will vary with gas capacity and to some extent on amount of tar to be removed. For example, the unit cost of Cottrell equipment per 1,000,000 cubic feet of gas cleaned per 24 hours is much less with a gas capacity of 30,000,000 cubic feet per day than with a gas capacity of 10,000,000 cubic feet per day. Unit operating and gas cleaning costs per 1,000,000 cubic feet gas cleaned likewise are somewhat lower with large installations although the only direct operating charge is for the electrical power, as no actual labor for maintenance and repairs, further than for occasional inspection, is required.

Some of the advantages of Cottrell equipment for detarring gases might well be mentioned.

(a) Cottrell equipment will give a high degree of tar removal. This has been thoroughly demonstrated by numerous tests in accordance with procedure previously outlined and approved by various gas officials. Equally high tar removal is not possible with other apparatus, such as baffles, screens, filters or scrubbers, unless they be of large size or operate with high back pressure.

(b) Cottrell equipment creates prac-

LOG OF OPERATING AND EFFICIENCY TESTS
COTTRELL ELECTRICAL PRECIPITATION INSTALLATION

Test No.	1	2	3	4	5
Date	8/12	8/13	8/13	8/18	8/18
No. of Precipitator Units Operating	2	2	2	2	2
Duration of test (minutes)	180	176	143	156	139
Gas Vol. treated—Natural—M. cu. ft.	1,640	1,650	1,360	1,690	1,660
Gas Vol. treated—Std.—M. cu. ft.	1,550	1,559	1,282	1,594	1,572
Gas Vol. treated/hour—Nat.—M. cu. ft.	547	562	571	650	716
Per Cent Precipitator Rating	82.9	84.8	86.6	98.5	108.5
Wet tar precipitated—pounds	236.4	245.5	192.2	284.2	258.6
Per Cent H_2O	21.9	16.6	13.1	30.6	27.4
Grains Dry tar precipitated/cu. ft. Std.	.835	.920	.912	.866	.871
Sample Outlet Gas metered—Natural	180	171	171	200	200
Sample Outlet Gas metered—Std.	174.2	167.0	162.1	194.4	191.7
Duration of sample test—min.	166	167	130	149	135
Increase—wgt. of sample tube—grains	7.5596	3.6183	5.2956	8.4711	15.336
Per Cent H_2O (assumed same as precipitate)	21.9	16.6	13.1	30.6	27.4
Grains Dry tar in outlet gas/cu. ft. Std.	0.034	0.018	0.029	0.030	0.058
Grains Dry tar in inlet gas/cu ft. Std.	0.869	0.938	0.941	0.896	0.929
Per Cent tar removal	96.2	98.0	96.9	96.7	93.9
Power line Voltage	200	195	198	201	210
Amperes	27	36	34	36	38
K.w. hours (not corrected for P.F.)	5.4	7.1	6.7	7.2	8.0
K.w. hours per million cu. ft. treated	9.9	12.6	11.7	11.0	11.1

Fig. 6.

tically no pressure resistance, such pressure as is set up, being constant for given gas velocity and due primarily to change of gas flow and change of section. Actual tests have indicated that this pressure resistance, through the precipitators, does not exceed 0.3" to 0.5" H_2O and for high efficiencies of tar removal where the gas velocity is reduced this is even less. Compare this with the variable pressure of 6" to 10" H_2O, and even higher when apparatus is clogged up, that is necessary with other equipment. This reduction in back pressure makes possible not only a saving in fan power, but also simplifies the construction of and allows the use of smaller gas seals throughout the gas system. Furthermore, the constant back pressure permits uniform gas production whereas a variable pressure affects the blower operation and interferes with uniform gas production.

(c) Cottrell equipment is self-cleaning and requires practically no maintenance and care, except for occasional inspection. Compare this with scrubbers that require frequent attention and shut downs for repacking and with filter and screens that have to be cleaned and washed periodically to prevent clogging.

(d) Cottrell equipment is compact in size and requires little ground space. A precipitator unit to handle 5,000,000 cubic feet a day is about 6' 0" in diameter, whereas, a scrubber for equal gas volume and efficiency must be about 12' 0" in diameter.

(e) Cottrell equipment can be designed for a certain specific gas volume and efficiency. If the gas volume is decreased the efficiency of tar removal increases and the pressure resistance is lowered. If the gas volume is increased during abnormal peak production the efficiency is reduced slightly, not in proportion with increase gas volume but in accordance with a logarithmic curve.

(f) Direct operating expense with Cottrell equipment is low. Even considering fixed and carrying charges, cleaning costs with Cottrell equipment are low due to low maintenance and repairs. Likewise, purification charges are lower due to less tar in gases entering purifiers.

(g) No housing is necessary over the precipitators to protect them from the weather. This makes it possible to greatly simplify plan construction.

To sum up, all gas plant manufacturers realize the advantage of tar free gas aside from the desirability of recovering such tar as a by-product. In a water gas or similar gas plant tar will rapidly reduce the efficiency of oxide purifiers or will tend to clog up wet purification towers. This necessitates either frequent shut downs for cleaning or repacking or the construction of unnecessarily large purifiers. Coke oven operators are confronted with the same problem and in addition realize that tar will reduce the efficiency of ammonia recovery plants and will contaminate the sulphate, thereby reducing its value. The operation of the Cottrell installations now in use indicate the continued and even increasing application of this method for detarring combustible gases.

Associations Affiliated with A. G. A.

Canadian Gas Association
Date of affiliation—Mar. 25, 1919.
Pres.—E. R. Hamilton, Nova Scotia Tramways & Power Co., Halifax, N. S.
Sec.-Tr.—G. W. Allen, 7 Astley Avenue, Toronto.
Conv., 1925.

Empire State Gas and Electric Association
Date of Affiliation—Nov. 21, 1919.
Pres.—M. S. Sloan, Brooklyn Edison Co., Brooklyn, N. Y.
Chairman Gas Section—F. F. Ingwall, Binghampton Gas Works, Binghampton, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Annual Meeting, 1925.

Illinois Gas Association
Date of Affiliation—Mar. 19, 1919.
Pres.—J. G. Learned, Public Service Co. of Northern Illinois, Chicago, Ill.
Sec.-Treas.—R. V. Prather, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., Chicago, Ill., March 18, 19, 1925.

Indiana Gas Association
Date of Affiliation—April 24, 1919.
Pres.—G. M. Johnson, Northern Indiana Gas & Electric Co., South Bend Ind.
Sec.-Tr.—E. J. Burke, Citizens Gas Co., Indianapolis, Ind.
Conv., 1925.

Iowa District Gas Association
Date of Affiliation—May 21, 1919.
Pres.—H. J. Carson, Cedar Rapids Gas Co., Cedar Rapids, Ia.
Sec.-Tr.—H. R. Sterrett, 551 Seventh St., Des Moines, Ia.
Conv., 1925.

Michigan Gas Association
Date of Affiliation—Sept. 18, 1919.
Pres.—Chester Grey, Lansing Fuel & Gas Co., Lansing, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., 1925.

Missouri Association of Public Utilities
Pres.—C. L. Proctor, Empire District Electric Co., Joplin, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th. St., St. Louis, Mo.
Conv., 1925.

New England Association of Gas Engineers
Date of Affiliation—Feb. 19, 1919.
Pres.—C. R. Prichard, Lowell Gas Light Co., Lowell, Mass.
Sec.-Tr.—J. L. Tudbury, 247 Essex St., Salem, Mass.
Conv., Biltmore Hotel, Providence, R. I., Feb. 18, 19, 1925.

Gas Sales Association of New England
Date of Affiliation—Oct. 1, 1919.
Gov.—J. J. Quinn, Citizens Gas Co., Quincy, Mass.
Sec.—J. H. Sumner, 719 Massachusetts Ave., Cambridge, Mass.
Annual Meeting, 1925.

New Jersey Gas Association
Date of Affiliation—April 25, 1919.
Pres.—Raymond W. Lee, Cumberland County Gas Co., Millville, N. J.
Sec.-Tr.—R. A. Koehler, Public Service Gas Co., Newark, N. J.
Meeting, Jersey City, N. J., Jan. 23, 1925.

Pacific Coast Gas Association
Date of Affiliation—Sept. 18, 1919.
Pres.—E. L. Hall, Portland Gas & Coke Co., Portland, Ore.
Exec. Sec.—Clifford Johnstone, 619 Wells Fargo Bldg., San Francisco, Calif.
Conv., Portland, Ore., 1925.

Pennsylvania Gas Association
Date of Affiliation—April 10, 1919.
Pres.—John A. Frick, Allentown-Bethlehem Gas Co., Allentown, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., 1925.

Southern Gas Association
Date of Affiliation—May 20, 1919.
Pres.—W. H. Taylor, Georgia Railway & Power Co., Atlanta, Ga.
Sec.-Tr.—J. P. Connolly, 141 Meeting St., Charleston, S. C.
Conv., Wilmington, N. C. June 9-11, 1925.

Southwestern Public Service Association
Date of Affiliation—September 26, 1923.
Pres.—G. W. Fry, West Texas Utilities Co., Abilene, Texas.
Chairman Gas Section—F. C. Armbruster, Southwestern Gas & Elec. Co., Shreveport, La.
Sec.—E. N. Willis, 403 Slaughter Bldg., Dallas, Texas.
Conv., Houston, Texas, May 19-22, 1925.

Wisconsin Utilities Association
Date of Affiliation—March 25, 1919.
Pres.—G. C. Neff, Wisconsin Power & Light Co., Madison, Wis.
Chairman Gas Section—J. G. Felton, Northern States Power Co., La Crosse, Wis.
Exec.-Sec.—J. N. Cadby, 445 Washington Bldg., Madison, Wis.
Conv., 1925.

Geographic Divisions

Eastern States Gas Conference
Date of Formation—April 11, 1923.
Pres.—P. S. Young, Public Service Gas Co., Newark, N. J.
Sec.-Tr.—R. A. Koehler, Public Service Gas Co., Newark, N. J.
Conv., Newark, N. J., April, 1925.

Employment Bureau

SERVICES REQUIRED

WANTED by a gas and electric company, young man to do office work who has had experience in ledger work, general routine work, and especially on the complaint or service desk. In reply, please give outline of experience, references and salary expected. Address:
Key No. 022.

WATER HEATER SALESMAN WANTED—A large gas company needs several good water heater salesmen to work on commission basis in Western Pennsylvania. Exceptionally good territory.
Key No. 026.

WANTED—Two experienced salesmen, to specialize on the sale of gas boilers for house heating and industrial uses, by a gas company desirous of increasing its present gas boiler load. Give details of experience and results obtained.—Address A. G. A.
Key No. 039.

APPLIANCE SALESMEN—Calling on Gas Companies to sell tank water heaters as a side line on commission basis. State territory, references and experience. Address A. G. A.
Key No. 042.

WANTED—Gas main laying foreman for gas company in vicinity of New York. Address A. G. A.
Key No. 044.

WANTED—A Gas Company desires the services of a technically trained man, having had experience in main and service work; college graduate preferred. Address A. G. A.
Key No. 045.

WANTED—An experienced man to take charge of gas department in a small New England city. It is a water gas plant with annual sales of about 31,000,000 cu. ft. In writing state fully your training, experience and salary expected. Address A. G. A.
Key No. 046.

SERVICES REQUIRED—Application manufacturer wanting three salesmen for next year; one for Eastern states and two for the Middle Western states. Men with water heater and gas range experience desired. Address A. G. A.
Key No. 047.

SERVICES OFFERED

WANTED—Position of responsibility as Manager or Industrial Fuel Engineer—18 years' varied experience in the gas business. References and service record furnished. Address A. G. A.
Key No. 142.

AVAILABLE—Man of executive ability, experienced in all phases of the gas business and sales and advertising work, including agency work on National accounts. Capable of creating, planning and following through all forms of advertising. Prefer locating in West or South Atlantic states. Minimum salary of $4,000. Address A. G. A.
Key No. 167.

WANTED—Am open for position as appliance salesman with Gas Company or Appliance Manufacturer. Have had twelve years' experience selling ranges, water heaters, room heaters and illuminating devices. Am at present employed in this capacity by a large corporation, but desire to make a change. Can furnish references from present and past employers. Married. Can report on reasonable notice. Address A. G. A.
Key No. 179.

COKE PLANT EXECUTIVE seeks new connection. Over eight years' experience, Koppers and Solvay ovens with complete by-product recovery. University graduate, thirty-four years old, married, with one child. Fitted for Assistant Superintendent or Assistant to Manager of any coke or gas industry. Will locate anywhere. Address A. G. A.
Key No. 181.

I have had many years' experience in design, construction and operation of coal and water gas plants of from 42,000 to 6,000,000 daily capacity. Am now employed but wish to make a change to better my position. I desire a place as Manager, Assistant Manager or Engineer. I will go anywhere. Best of references furnished. Address A. G. A.
Key No. 185.

GAS ENGINEER—Eighteen years' experience in design, construction and operation of gas plants, all departments, manufacture and distribution, also electrical experience in combination plants desires position of responsibility with progressive company. Past six years chief engineer with large gas company. Address A. G. A.
Key No. 171.

ENG-SUPT. of one of the largest gas plants in the country would consider change. Desires to locate with company in which opportunities for future advancement are better than in present position. Is a married man. Has technical University training. No particular preference as to location. Address A. G. A.
Key No. 159.

GAS ENGINEER—18 years' experience with 3 largest gas companies in the country, am open for engagement as gas engineer, general superintendent, manager or gas sales engineer. Excellent references. Address A. G. A.
Key No. 173.

WANTED—A position as General Manager or Engineer of Gas Property. Have had experience and can produce results in either large or small properties. Can give exceptional references on past record. Address A. G. A.
Key No. 175.

EXECUTIVE, with fifteen years' experience in coke oven practice on plants manufacturing surplus gas for city consumption, desires connection with growing public utility either as executive or position leading to same. College graduate, good personality, married. Available on reasonable notice. Address A. G. A.
Key No. 172.

GAS ENGINEER, 40, with thorough training (17 years) in the gas business and real executive ability, wishes to connect up with a live concern in any capacity where technical and commercial ability will count. At present engaged, but could be available on two months' notice. Address A. G. A.
Key No. 176.

WANTED—Executive position by young man with eighteen years' (18) experience in all branches of gas business. Eight years (8) as manager. Past four years, vice-president and general manager of gas company with nearly 10,000 meters. Mechanical engineer. Expect to voluntarily place myself on the market about August 15, 1924. Will accept position as manager of company with 7,000 to 10,000 meters, or assistant manager and engineer, with larger company. Married man. Replies must be strictly confidential. Address A. G. A.
Key No. 177.

WANTED—Am open for a position as a salesman for a gas appliance manufacturer or as manager of a gas appliance department with a gas operating company, eighteen years' experience with mechanical and technical training. Married. Can furnish A1 references. Address A. G. A.
Key No. 180.

ENGINEER STATISTICIAN—10 years' experience in the valuation and operation of mines, industrial plants, and public utilities in connection with the maintenance, statistical, legal and accounting phases of business, now seeks permanent engagement with reputable firm. Address A. G. A.
Key No. 183.

WANTED—Position as Manager of Gas Company. Coal or water gas. College trained. Have served in works, street and office. Doubled meters and doubled output in last position. Address A. G. A.
Key No. 184.

WANTED—An Executive Position in Commercial Department. Young man with 14 years' experience and a thorough knowledge of the gas business. Salary discretionary. Address A. G. A.
Key No. 186.

WANTED—Position of assistant superintendent or superintendent of water gas plant. A technical graduate, 31 years of age. Have had nine years' operating experience with large gas company, having served as assistant superintendent in their three largest plants. Particularly adapted and trained in obtaining results. Now available and best of references can be furnished. Address A. G. A.
Key No. 187.

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